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Two curious statements appear in the official report of the last Pharmaceutical Council meeting. Mr. Mackay was pointing out that, although a considerable discrepancy in the results of the examinations in London and Edinburgh was noticeable in 1877, this could have been far less marked if a series of years had been taken. He had observed in examining the books that "on one day only three or four out of fourteen would pass, and the next day the proportion would be reversed!" To get fourteen to pass out of three or four candidates is a result assuredly not known out of Scotland. Then Mr. Betty took up his parable, and this was his contribution to the united wisdom:—"They might, by an occasional interchange of visits, produce uniformity; but what they intended was to produce identity, and unless they did that they went half-way." What this oracular utterance may mean Mr. Betty only knows. An examination in Edinburgh can no more be identical with one in London than the east can be identical with the west. Mr. Sandford, in the same discussion, told the Council that there had been more failures than usual on the occasion of the recent visit of the deputation from London, "and this might perhaps be partly accounted for by their presence, which might somewhat embarrass the young men." Correct, no doubt, but not over-modest.

Notwithstanding the recent death of Mr. George Cruikshank, who was almost the solitary notability whom the Pharmaceutical Council has been able to hook at their annual *conversazione* during their own imposing and embarrassing presences, of course, the annual *soirée* is to be repeated. Refreshments

will be stornly refused, and baskets and bottles above a certain size will be prohibited. By a thoughtful coincident provision, however, male visitors will be required to carry their hats about with them all the evening, and those likely to suffer from the drought and famine may carry some provisions in those convenient receptacles. All pharmaceutical chemists, pharmaceutical assistants, and pharmaceutical apprentices will be entitled to a piece of yellow paper, explaining where their carriages are to set them down and where to take them up. To avoid inconvenience in South Kensington, it is respectfully requested that pharmacutists will not drive more than two horses on this occasion.

The Pharmaceutical Benevolent Fund has now reached the handsome figure of 18,000l. It is a noble work to have accomplished; but better even than what has been saved is the record of what has been spent. If every profession would sweep its doors as clean as we pharmacists do what a happy country this would be!

Sir John Lubbock has caught something very like a Tartar in accepting the paternity of that Dental Practitioners' Bill. The whole mass of the medical journals and societies have come down upon him, declaring that they would resist to the utmost any such encroachments on the rights of medical practitioners. The bill as drawn would not have permitted a surgeon, who was not actually practising dentistry, to afterwards adopt, if he should so please, the title of surgeon-dentist. The chemists through their two organisations, and pretty largely by the penny post, arrayed themselves in hostility; and the House of Commons showed no enthusiasm. Sir John Lubbock has done his best to meet his opponents with politeness and with concessions. His evident desire to infringe no one's vested rights does credit to his sense of justice, but his too ready compliance with the request of the dentists to steer their defective bill through its parliamentary voyage is not quite so creditable to his reputation as a legislator. He has made several attempts to get his bill read a second time, but a struggle for existence in this eventful Session will almost certainly overtax the strength of this not very necessary and not very carefully drawn proposal.

The Weights and Measures Bill, which is intended to consolidate the various enactments from Magna Charta downwards which affect weights and measures, has been printed. It does not greatly concern chemists, but there is some ambiguity about its references to the apothecaries' weights. It has been referred to a Select Committee of the House of Commons.

The conduct of Mr. Flux, the solicitor of the Pharmaceutical Society, in interfering in the case pending between the Apothecaries' Society and the Chemists' Trade Association, without consulting or informing the solicitor of the latter body, was most certainly discourteous, and most probably unwise. At the meeting of the executive committee of the Association, Mr. Glaisyer made some strong but quite justifiable remarks on this interference. His comments have been refused admission into the Pharmaceutical Society's organ, which loftily declares that "there is no reasonable justification for them."

On Wednesday, March 6, the present Major and Minor students of the "South London School of Pharmacy" met their director, Dr. Muter, at the conclusion of the chemical lecture, and presented him with an address expressing their respect for him as a teacher and their regard for him personally. The address was accompanied with the gift of a magnificent silver and crystal epergne, most tastefully decorated with fruit and flowers. Dr. Muter, who was much surprised and moved, expressed his acknowledgments in a few feeling words, and the proceedings terminated with hearty

cheers from the students, again and again renewed, as he retired almost bending under the weight of the splendid present.

The Council of the Society of Arts, being desirous of obtaining a better set of blowpipe apparatus for qualitative purposes, which should be sold at a guinea, than any now to be obtained for that sum, offered their silver medal with a prize of 10*l.* for the best set to be sent in competition. The award has been made to Messrs. T. H. Letchen, of St. Day & J. F. Letchen, of Camborne, Cornwall. A bronze medal was also awarded to Herr Osterland, of Freiberg.

It will be observed that the prosecutors in the Nottingham counter-prescribing case are appealing to the profession for funds. If they don't get them, "it is quite possible that at the last moment the whole case will have to be abandoned." The *British Medical Journal* backs up the appeal with energy. It is stated that the Apothecaries' Society, which, according to Mr. Upton, never did and never will sanction a prosecution on a pure and simple case of counter-practice, has promised 50*l.* towards the expenses.

Mr. Thomas Sanders, a chemist of Stoke Newington, being summoned for selling as methylated finish a spirit without the proper proportion of gum, undertook his own defence in a style which did more credit to his courage than to his chemistry. First he maintained that if the analysts had used troy instead of avoirdupois weights, as they should have done, they would have found sufficient gum. Of course they should not have used troy weights; and if they had done so, the result would have been more unfavourable to the defendant. Then he had a theory about the spirit as it evaporated undissolving its gum, and consequently (according to him) the upper surface would always contain less gum than the bottom of a jar. These gallant struggles did not avail, and Mr. Sanders was fined 12*l.* 10*s.*

Screwing up oxalic acid in a bit of paper like a ha'porth of rock is not quite the modern system of supplying it to the public. But it seems to have been the plan selected by the London and Provincial Supply Association (Limited), of Tottenham Court Road. This company has been prosecuted by the Pharmaceutical Society for selling poisons, and the application of the Pharmacy Act to a limited company is now under the consideration of the magistrate of the Marlborough Street police-court.

We translate from a narrative sent to us by M. Emile Gilbert, of Moulins, a description of a still far too common curse of French country life, the sorcerer. The instalment which we publish in this issue describes the veterinary sorcerer, and indicates his cunning methods of impressing the peasantry with a reverence for his mysterious powers. The confidence and the fear which he inspires are very real indeed, and indicate the necessity of such exposures as that of M. Gilbert. It is very strange that the French nation should present such singular contrasts of the highest culture by the side of the grossest ignorance and of the wildest scepticism by the side of the most absurd superstitions.

Messrs. Horner and Barker, makers of aerated water machinery at Manchester, commenced business in May 1876, and in February 1878 stopped with a deficiency of over 5,000*l.* in addition to some 1,000*l.* or 1,200*l.*, which seems to have been the united capital of the partners at starting. This firm was exceedingly prominent at the show of aerated water machinery held in London last autumn.

The affairs of John F. Henry Curran and Co., the well-known patent-medicine dealers of New York, are to be wound-up, and the committee appointed to investigate think that the estate will be able to produce 37½ cents in the dollar within two years. The losses have arisen since 1873, when the present firm was organised with a nominal capital of 625,000 dollars.

The American Pharmaceutical Association has prepared a set of nearly one hundred glass cases containing specimens of indigenous drugs for exhibition at Paris this coming summer. The collection is afterwards to be presented to the Paris School of Pharmacy.

Mr. J. Y. Buchanan, the chemist on board the *Challenger*, gave an account of his experiences to the Chemical Society on February 21. The most interesting discovery he made seems to have been the fact that the proportion of oxygen in the sea gradually decreases down to a depth of 300 fathoms, and from that point to the bottom it gradually increases. It is as well that every little scrap of information furnished by the officers of that scientific trip should be carefully preserved, for the country had to pay pretty handsomely for it, and the total results have not yet startled the world.

Professor Redwood gave a very interesting lecture on Spectrum Analysis in the Pharmaceutical Society's theatre on February 20. The attendance was good and the experiments were well chosen and most successful.

Water, with all its mild virtues, has an exciting effect on analysts and sanitary reformers. We give a brief report of a recent meeting of the Society of Engineers, at which the representatives of some of our filter companies, with Mr. Wanklyn in the bargain, had a small set-to.

A chemist at St. Albans has distinguished himself by a silly quarrel with his assistant, which brought him before the local magistrates. His ebullition of temper cost him forty shillings and costs.

Mr. Robert Owen Fitch, of Hackney, who, as Charlotte Cordry said of herself, has never wanted energy, has lately taken counsel with "a graduate of a foreign university," and a registered chemist, and the three have hatched an Apothecaries' Act Amendment Bill, which would quite clearly establish the legal right of chemists and druggists to practice at the counter to their hearts' content. Mr. Fitch, the graduate, and the registered chemist claim to have interviewed sixty Members of Parliament and to have communicated with one noble lord. The sixty-one opinions obtained are not, however, supplied. The bill seems to offer an excellent chance for the liberal party to bring together its scattered forces.

Notes on thymol and hydrobromic acid, two new chemicals which have lately secured a certain medicinal reputation, will be found in different parts of this number.

Dr. Tiehborne exhibited at a recent evening meeting of the Pharmaceutical Society of Ireland, a specimen of so-called syr. Rhæados, which had been offered by a London house, and which was simple syrup coloured by magenta. Mr. H. N. Draper detailed a process for the detection of magenta by extracting it with chloroform.

The London Chemists' Assistants' Association have signalled their vigorous establishment by a *conversazione* at the Quebec Institute, of an interesting character. We publish a paper on the Pharmaceutical Examinations, read by the president before a recent meeting of the Association, which will probably be of service to many struggling to fit themselves for pharmacy. Mr. Princip does not indicate any short cut to success, but he gives some good sound practical hints.

Wholesale druggists and shippers of medicines and medical stores will recognise the value of the new feature we have introduced into this journal in the list of exports of such material from the port of London. Our list has been obtained and compiled with much labour and expense. It shows the general course of export trade, the foreign markets for particular goods, and the channels through which the trade passes.

CORNER FOR STUDENTS.

CONDUCTED BY RICHARD J. MOSS, F.C.S.

NOTHER of the chemical compounds of the Pharmacopœia is intended to form the subject of the next exercise in qualitative analysis. The substance is to be submitted to a systematic chemical examination, its constituents determined, and its name ascertained. The analysis is to be conducted in a manner adapted for the detection of all the ordinary basylous and acidulous radicals, and a report is to be made as to the identity of the substance.

Students who wish to compete should send us their names and addresses before the 20th inst. Samples of the substance for examination will be forwarded on the 25th inst.

Students' papers will be received up to April 15.

ANSWERS.

The subject of the last exercise was *Hydrargyrum ammoniatum*, P., infusible white precipitate, also known as *Mercurius precipitatus albus*. It contained a small quantity of ammonium chloride, with traces of calcium and the sulphuric radical.

This is one of an interesting series of compounds which have been the subject of much theoretical speculation. Some of them are known to the alchemists, and in course of time were regarded as compounds of ammonia with mercury salts. According to the amidogen theory of Kane these substances were looked upon as compounds containing amide of mercury. Other theories represented them as containing mercury in the form of oxide. The theory that is now generally accepted was first proposed by Gerhardt, who pointed out that these substances might be regarded as containing the compound radical ammonium with its hydrogen partly or entirely replaced by mercury. Thus a well-known black substance, mercurousammonium chloride, produced by exposing dry calomel to the action of ammonia, is ammonium chloride, in which one atom or one-quarter of the hydrogen is replaced by one atom of monad mercury— I_2HgCl . The compound known as fusible white salt, or mercurammonium chloride, $\text{N}_2\text{H}_6\text{HgCl}_2$, contains a double molecule of ammonium, in which two atoms of hydrogen are replaced by one of dyad mercury. The subject of our exercise is dimercurammonium chloride, $\text{N}_2\text{H}_4\text{Hg}_2\text{Cl}_2$, in which four atoms of hydrogen in the double molecule of ammonium are replaced by two atoms of dyad mercury.

When dimercurammonium chloride is heated to a temperature of low redness, it is decomposed, turning yellow, and yielding a sublimate of mercurous chloride, while ammonia and nitrogen are evolved. Under favourable circumstances the mercurous chloride is converted into the black compound referred to above by the action of the ammonia. If heat be very gently applied ammonia is only evolved, and a red substance of a complex composition, which most of our correspondents must have observed, remains behind. The yellow powder that is produced by the action of hot water on dimercurammonium chloride is a hydrate of tetramercurammonium chloride, in which all the hydrogen in a double molecule of ammonium is replaced by four atoms of monad mercury. Several students noticed the production of this compound, and in some cases where the powder was boiled with water in experimenting on its solubility the decomposition that took place led to the detection of a larger quantity of ammonium chloride than would have been found if only cold water had been employed.

PRIZES.

The first prize for the best analysis of the substance has been awarded to DONALD GRANT, 80 St. Mary Street, Weymouth.

The second prize has been awarded to W. MARSON, 53 Greengate Street, Stafford.

Marks Awarded for Analyses.

Donald Grant (1st prize)	..	..	..	..	..	90
W. Marson (2nd prize)	..	..	..	..	..	88
C. Clayton	..	..	..	..	..	85
Excelsior	..	..	..	..	..	85
Student	..	..	..	..	..	83
J. F. E.	..	..	..	..	..	83
J. P. Harold	..	..	..	..	..	80
C. F. Wyatt	..	..	..	..	..	80
Bicyclist	..	..	..	..	..	78
C. J. Bennett	..	..	..	..	..	75
H. J. Jackson	..	..	..	..	..	75
P. Smith	..	..	..	..	..	75
A. Timmius	..	..	..	..	..	75
Reagent	..	..	..	..	..	75
Nil Desperandum	..	..	..	..	..	75
W. R. D.	..	..	..	..	..	73
N. M. F.	..	..	..	..	..	70
W. E. H.	..	..	..	..	..	70
W. Buckley	..	..	..	..	..	70
C. P. Laidler	..	..	..	..	..	70
Cuprum	..	..	..	..	..	70
Rotate	..	..	..	..	..	70
Ekoni	..	..	..	..	..	65
C. E. L.	..	..	..	..	..	60
M. J. Todd	..	..	..	..	..	60
Carbo Tritici	..	..	..	..	..	60
T. G. Nicholson	..	..	..	..	..	55
B. Illingworth	..	..	..	..	..	20
S. M. B.	..	..	..	..	..	20

TO CORRESPONDENTS.

Prizes.—The students to whom prizes are awarded are requested to write at once to the publisher, naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as second prize.

* All Communications should include the names and addresses of the writers.

Bicyclist.—You must remember that the flame test for sodium is so very sensitive that it is almost impossible to get any substance so free from sodium that this test fails to show its presence. In judging whether the alkali metals are present or not you must be largely guided by the quantity of residue that remains when all other substances are separated.

Reagent.—In testing the solubility of a substance in water a small quantity of a soluble substance is easily overlooked in the presence of a large quantity of an insoluble substance, unless you evaporate the clear water to dryness, and observe whether a residue remains.

W. R. D.—The quantity of the sulphuric radical present was very small. You will find that your hydrochloric acid contains enough iron to give the reactions which you observed.

C. P. Laidler.—The ammonium chloride which you detected was not all contained as such in the original powder; it was produced by the action of the boiling water, which decomposes the dimercurammonium chloride, as explained above.

Rotate.—Your brief notes do not represent very much work; you can surely manage to make a more elaborate analysis.

Ekoni.—It is very probable that your reagents contain enough arsenic to give the reactions which you observed.

C. E. L.—Your report describes an analysis which would certainly have failed to detect a number of ordinary basylous and acidulous radicals which might have been present. A systematic examination would not have this defect.

M. J. Todd.—We could not detect a trace of effervescence. The change of colour that you attributed to lead is referred to above.

Carbo Tritici.—The change of colour that you observed on adding hydrogen monosulphide to the solution is highly characteristic, and is a distinguishing feature of mercuric compounds.

T. G. Nicholson.—The formulae which you employ are unnecessarily complex. Constitutional formulae are very useful in the study of chemical transformations, but when brevity only is the object in view the formulae which embody least theory are the best for your purpose.

B. Illingworth.—It is very remarkable that your paper is almost a facsimile of another from the same town. One comes from High Street, and the other from Low Lane, Birstall. The author of one of the papers refers to the analysis as a first attempt, and curiously enough makes exactly the same mistakes as you make. He adopts the very same arrangement of his results, and finally rejoices in the same Christian name—Benjamin. Perhaps you can throw some light on the subject.

S. M. B.—See remarks to B. Illingworth.

Pharmacalia.

THE BOTANY OF THE RIVIERA.

A YEAR ago, exactly, Professor Flickiger passed his Easter holiday in Liguria, chiefly near that strip of land which stretches round the Gulf of Genoa, and which is called the Riviera. The beauty of the landscape won his admiration, and he has let others share his own enjoyment by his description of the scene. His sketches, which have been already published in detachments, have now been collected and arranged in pamphlet form, with additional information. The account is strictly botanical, and very pleasant is the reading. He tells us about the conifers, and the handsome *Juniperus oxycedrus*, and the famous mastie tree, *Pistachia lentiscus*, which adorns the Villa Giribaldi, probably one of the largest specimens at present in existence. The age of this grand survivor of the fittest dates back, it is said, even several centuries, and it remains uninjured, frost and man having alike left it undisturbed. To such of us as are condemned to gaze upon a sparse and unthankful plot of ground which we politely call a garden, the mere perusal of the professor's enumeration of rare and beautiful plant specimens suggests thoughts akin to envy, and we find it hard to believe with Bacon that the garden is the purest of human pleasures and the greatest refreshment to the spirits of man. These forty-five pages, just issued, form a picturesque catalogue of floral loveliness, which well embody the sentiment of the noble essayist, "I do hold it in the royal ordering of gardens, there ought to be gardens for all the months of the year, in which, severally, things of beauty may be then in season."

We pass by a long list of indigenous and acclimatised varieties, only mentioning the regret expressed that nowhere throughout the Riviera is there an attempt made to distil the essential oils, except at Mentone. In a crude fashion rosemary, lavender, and thyme are occasionally distilled; the economic value of the labiates is obvious to every pharmacist, and in the last nature has provided an effective antiseptic, thymol, to which the apathetic cultivator pays no heed. We might vary the old poetical adage—

"We take no note of thyme but by its loss."

We cannot, however, pass by the olive tree, *Olea Europæa*, the presence of which gives a character to this region.

Its fresh young blossoms begin to unfold in spring, "and its thick evergreen leaves cover the landscape with their solemn grey which accords so well with the cloudless sky, the bare mountain-tops, and the blue-green sea." The olive grows in all imaginable spots: neither age nor violence can extinguish its vital forces, and it finds a secure resting-place in the wildest and most inaccessible rocks.

In conspicuous contrast with the seriousness of the olive, stand the light shining leaves of the lemon trees. All the year round the lemon displays its pink-tipped flowers and fruit, though the principal harvest is about the middle of May. The lemon is more profitable than the orange, and consequently its cultivation is preferred. If we may trust pictorial illustration, an exquisite and lovely thing is the united fruit and foliage of the lemon.

An entirely altered appearance has been given to the face of the country by the introduction of the Tasmanian *Eucalyptus globulus*. Fine specimens of it are seen everywhere from Genoa to Cannes—many entire lengths of road are planted with it, and in several gardens these acclimatised citizens tower boldly over their surroundings.

The natural fertility of the Italian soil and a propitious climate have led to the establishment of various gardens along the Riviera, more or less known to fame.

At Pisa still flourishes one of the earliest university gardens,

laid out in 1547 by the Doctor Simplicium, or Professor of Materia Medica, who was the first to found the herbarium. The camphor tree, having no claim to be indigenous, can hardly be equalled elsewhere in Europe. At Genoa a picturesque situation has not saved its garden from degeneracy. At Antibes, still further west, Thuret, with his friend Bornet, laid out in 1857 a true botanic garden, which "has been kept in unsurpassed cultivation, and presents an incomparable collection of living trees and shrubs." We now reach the little village of Mortola, where, from the heights down to the seashore, extends the garden of the Palazzo Orongo. The estate is owned by Mr. Thomas Hanbury, whose brother, the late Daniel Hanbury, "took the liveliest interest in here acclimatising the most remarkable plants brought together with the finest judgment from the most diverse countries." In fact Mortola was his practical laboratory, and it was here that by his brother's aid Daniel Hanbury was enabled with advantage to carry out his original researches. Some good illustrations are given in an old number of the *Gardener's Chronicle*, which well show the success which here attended the introduction of tropical and Australian forms of vegetation.

Long ago we observed to the distinguished pharmacologist that there was no moral virtue exhibited in cultivating botanical study in the pastoral retreat at Clapham: at Mortola a cloudless sky and the delights of scenery formed even stronger inducements.

Our readers may like to know a little about a place where one of our confraternity passed some of his happiest hours. First a vigorously-grown thicket of eucalyptus and acacia met the view. In a few years the Australian "bush" will be seen in all its originality.

The acacias when in full bloom are covered with a prodigal abundance of golden catkins of flowers, and present an exotic aspect. It would be desirable that a chemist should take up his residence here in the South where he could carry out exact observations upon essential oils. The large leafless Euphorbias are in fine condition, and the South African species of aloe, including *A. Socotrina*, as well as a citizen of the New World, the American agave which flourishes in a surprising manner. Just before the development of the flower-stem the agave contains a saccharine juice which by fermentation yields the Mexican national drink called "pulque," a beverage which resembles koumiss. Whether, as might be reasonably supposed, the agave might be utilised in Italy for the production of sugar, alcohol, or vinegar, has not yet been determined; for the frugal Ligurian population possess all they want in their olives, vines, and potatoes, and pay scant attention to novelties which offer the most palpable advantages. While plants of diverse natural orders and countries have found a home in the Palazzo Orongo, other trees and shrubs elsewhere neglected have received a welcome. Up to the year 1852 the broad-leaved box-tree grew in extensive woods in the Island of Majorca. Since that date this tree, as useful for economic purposes as the *Buxus sempervirens*, was ruthlessly laid low by axe and fire. It has taken refuge on the slopes of Mortola. The care bestowed on medicinal and economic plants will cause no surprise. Here is the *Ricinus communis*, which in four years has grown to a handsome young tree, bearing plentiful flowers and fruit. It does not run into the herbaceous form as when cultivated with us. At Naples it is raised for the sake of its oil, but not so on the Riviera. Experiments are being undertaken with the *Quercus suber*, the manna ash (*Fraxinus ornus*), the sandarac-tree (*Callitris quadrivalvis*), and many others; while particular care has been bestowed upon the culture of certain Chinese plants. We believe that the one drawback is the want of a constant supply of water, and that effective means are being taken to remedy this defect; there is a distinct disadvantage in the "sacred, high, eternal noon," and the proprietor of the

Palazzo Orongo hails with satisfaction one of these wet and cloudy days of which we have so liberal a supply.

There are many ways in which a garden may be viewed, some prize most "the breath of flowers as it comes and goes like the warbling of music," others "alleys fair and spacious," others science and its teachings. We must learn to be catholic to our likes and dislikes. In this brief summary we have room only to allude to some few specimens of horticulture which illustrate successful cultivation.

If we have mentioned fortunate experiments we should not altogether lose sight of those less happy in result. How it happened that the fairest promise sometimes issued in disappointment, and that good fortune did not always wait upon endeavour, the records of the Palazzo Orongo would disclose. The final result, however, of the care of the owner of this fairy dwelling-place is the exhibition of a remarkable flora—and we are grateful to Professor Flückiger for his description of the scenes by which he was surrounded.

THE KEW GARDENS.

An agitation has been set on foot to degrade the Royal Collections at Kew into a mere place of public amusement, probably as a compensation for the loss of Cremorne. We have no possible wish to limit the out-door recreations of the people. Let them have parks and open spaces, wide commons and green fields; but let them in the midst of their enjoyment refrain from inflicting a wrong on others. The first object in endowing the establishment at Kew was to roll away the reproach that England was the only place where there was no provision made for the national study of botany. To meet the requirements of students from every quarter, as also to provide for the wants of scientific men, neither labour nor skill, nor assiduous care has been wanting on the part of the directors of this noble institution, with its museums, its admirable collections, and its varied educational resources. The Royal Gardens are of proverbial excellence, as regards the promotion of their special purposes, and in many particulars unique. It is an unfair, and consequently an un-English thing, that the outside, pleasure-seeking visitors should intrude upon those hours which are of necessity set apart for study. At 1 o'clock P.M. the gardens are thrown open without let or hindrance; and the assembled throng can wander at their own sweet will down the broad avenues, among the flower-beds, and through the magnificent conservatories. The public are bound to recollect that the time liberally allowed for their relaxation is so much deducted from that available for private study. Moreover, the professor and his class would as greatly interfere with the comfort and free circulation of the visitor as the latter would hopelessly upset all systematic teaching. Let us live and let live. Those who are personally acquainted with Dr. Hooker will not charge him with a moroseness of disposition; and he should not be assailed by excited newspapers because he is a faithful guardian of the interests committed to his care.

DR. REDWOOD ON SPECTRUM ANALYSIS.

On Wednesday evening, February 20, Professor Redwood delivered a lecture before the members of the Pharmaceutical Society on "Spectrum Analysis." This was a continuation of the one given last year upon the same subject. The light employed was produced by means of a Grove's battery of forty cells from the disruptive electrical discharge from charcoal terminals. The spectrum formed by artificial light differed from the solar spectrum, since the latter was found to be intersected with what were termed Fraunhofer's dark lines. These lines, a photograph of which was thrown upon the screen, gave evidence of the composition of the sun and some of the stars, and it was one of the objects of the lecture to explain in what way inferences were drawn from these lines respecting the presence of certain chemical elements.

The nature of the electric light having been described, the lecturer went on to show that each elementary gas heated to a sufficiently high temperature to render it luminous yielded a spectrum peculiar to itself. This was illustrated by vapourised copper wire, zinc, and brass. The brass, being a compound of copper and zinc, exhibited a spectrum in which the elementary character of both appeared. The basis of spectrum analysis was, that substances capable of being converted into the state of vapour, and rendered luminous by heat, yield discontinuous spectra by which their presence can be ascertained. To some extent the colour of the light emitted was a distinguishing test—thus, for instance, the salts of strontium, lithium, sodium, thallium, boron, iridium, and potassium imparted a characteristic colour to flame. Such indications were not conclusive, for different substances imparted the same colour, and, also, one colour might be masked when blended with another. Coloured media had been employed by Mr. Cartmell to separate these colours by selective absorption. This photochemical method of analysis had now been superseded by the more perfect one of spectrum analysis.

The grand advantage this application of light possessed was its power of revealing quantities so minute as to defy their detection by other means; and to ascertain the composition of bodies so distant as to be otherwise beyond the reach of investigation.

The sun has had much of its history unfolded, and the dark lines in its spectrum coincided in their positions with those occupied by the bright and coloured lines in the discontinuous spectra of the vapours of well-known chemical elements.

Professor Redwood proceeded to adduce some of the evidence on which the foregoing statements were based. In order to elucidate the subject it was necessary to bring under review an outline of the accepted theories respecting the nature of light, heat, radiation, and absorption. Numerous practical demonstrations were exhibited to simplify the comprehension of the difficult branch of physics, great care being taken to distinguish between frequency and amplitude of vibrations. Colour in light depended on frequency of vibration and consequent wave-length in the ether, but intensity of light depended on amplitude of excursion of the vibrating particles.

It would be unprofitable to attempt a summary of a chain of connected argument, each link of which was of importance, Professor Redwood's object being that the statements made and inferences drawn from spectrum analysis should not be received in blind confidence, but that the reasons which had led to certain conclusions should be carefully investigated.

Throughout the lecture, and specially at the close, representations of spectra which had been obtained and carefully mapped out were thrown upon the screen. The value of the markings on these spectra was pointed out, and the audience were reminded that it was since the introduction of spectrum analysis that our new elements had been discovered, and that by this delicate mode of research Mr. Crookes had found his thallium.

Spectra had not only been taken of the sun, but of the light of the moon and of the planets; these, shining with a borrowed or reflected light, exhibited no essential difference from the solar spectrum. The fixed stars, in themselves luminous bodies, contained many elements that were known to us: their spectra showed dark lines similar to, but not identical with, those of the sun's light. "And now," said the lecturer, "having soared into the sky, explored the heavens, and analysed the sun and stars, we must return again to this lower world, which is but a speck in the universe, and we may contemplate with devout admiration the omnipotence of the Creator and Author of all things, by whom life and the conservation of energy are maintained and will be extended, as we believe, to the end of time."

An unusually large attendance of members and associates evinced the interest taken in the discourse, part of which, without a fair acquaintance with the physical laws of light and heat, would be found difficult to follow. At the termination of the lecture the professor was greeted with applause which might justly be called enthusiastic, and he was obviously gratified by this sign of hearty approval.

DR. SQUIBB ON HYDROBROMIC ACID.

Dr. Squibb, whose industry seems untiring, has sent us a note on hydrobromic acid, a remedy which is coming into general use. He states that the indefinite strength in which it is produced is a hindrance to its successful application, and he proposes, therefore, an acid of constant and known percentage. This acid is a sedative neurotic, to be exhibited as an alternate with the bromine alkaline salts, and is specially applicable as a corrective and preventative remedy for headache and cerebral distress. Most of the chemical facts given by Dr. Squibb relating to bromine and its compounds are familiar to English pharmacists, but he particularly recommends hydrobromic acid containing 34 per cent. of bromine, which represents the bromine of the potassium bromide in the proportion of about two to one; hence the quantity of such an acid equal to the bromine of 20 grains of potassium bromide would be 40 grains, a very convenient relation to be remembered. The formula and process are as follows:—

	Parts
Potassium bromide	6
Sulphuric acid, s.g. at 15° C. = 60° F. 1·838, at 25° C. = 77° F. 1·828	7
Water	9

Add to the sulphuric acid 1 part of the water and cool the mixture. Then dissolve the potassium bromide in 6 parts of the water by means of heat, supplying the loss of water by evaporation during the heating. Pour the diluted sulphuric acid slowly into the hot solution with constant stirring, and set the mixture aside for twenty-four hours that the sulphate of potassium may crystallise. Pour off the liquid into a retort, break up the crystalline mass, transfer it to a funnel, and having drained the crystals, drop slowly upon them 2 parts of the water so as to displace and wash out the acid liquid. Add the liquid thus drained off and washed out to that in the retort, and distil the whole nearly to dryness, or until nothing further distils off by moderate heating. The distillate will weigh about 10 parts, and should contain about 37 per cent. of hydrobromic acid.

Assay this product by means of normal volumetric solution of sodium, and add distilled water until it has the strength of 34 per cent. of hydrobromic acid.

In preparing the above the water and sulphuric acid must be quite cooled. In dissolving the bromide in water by heat the loss by evaporation must be made up by further addition. The quantity of sulphuric acid apparently in excess is necessary to cause the salt to crystallise out completely, else the distillation will be defeated when only about half finished by bumping in the retort. Smaller proportions of acid were found to be ineffectual. The heat must be moderated towards the close, to avoid sulphuric and sulphurous acids being carried over. When the acid is desired perfectly pure a very small quantity of barium hydrate must be added, and the whole re-distilled.

Hydrobromic acid, to be easily administered, must be diluted largely. A dose of 50 grains, which, as shown already, is equal to 25 grains of potassium bromide, requires not less than 8 fluid ounces of dilution. To make this palatable about 1 ounce of sugar or 2 ounces of syrup are desirable. Probably, however, much smaller quantities of the acid may prove effective than its equivalence to the bromides indicates. A syrup is proposed of 4 grains (3 minims) to the fluid drachm.

Hydrobromic acid will doubtless be useful for making

solutions of various bromides extemporaneously. Lithium bromide, for instance, is a salt containing nearly 90 per cent. of bromine, more bromine and less base than any other neutral salt possible. Nothing is simpler than to saturate the acid with lithium carbonate, and to adjust the volume of the solution to the dose required. The writer concludes with stating that he has not been successful in preparing hydrobromic acid according to other published formulas, and that as to the process now advocated, though not original, without the specified variation in quantity of the sulphuric acid used, and without crystallising out the potassium sulphate before the distillation, as described, no good result could be obtained.

To what extent hydrobromic acid has made its way into provincial practice we are not in a position to say, but it is a remedy that of late has found favour amongst the London medical profession.

CHEMISTRY OF THE RED POPPY.

Professor Attfield's views respecting the chemical constituents of the red poppy, *Papaver rhæas*, have been confirmed by O. Hesse. On examining the milk-sap of the unripe capsules he found that they left on evaporation about 34 per cent. of dry residue which contained no trace of morphine or any similar alkaloid. The residue contained 2·1 per cent. of rhæadine, and traces of other partially crystallisable alkaloids.

THE EXAMINATION OF SAFFRON.

We note an ingenious method for the examination of saffron. Mr. W. Stoddart says that very small quantities of its colouring matter may be detected by boiling with dilute hydrochloric acid, containing a strip of copper foil touched by a little piece of platinum and a little sugar. The colour changes to red. Saffron remains unchanged by alkalies.

PRESERVING THE COLOURS OF PRESSED PLANTS.

An equally ingenious mode of preserving the colour of pressed plants has been proposed. It is very easily applied, and may be of use to those who are about to enter upon Professor Bentley's second course of Botany. It is familiar that plants treated with alcohol can have their natural colours preserved for some considerable time—but, still, they begin to fade far too soon, and darken: many during the tedious process of drying assume a blackish colour in consequence of the partial decomposition or fermentation of the sap.

To avoid this, resort may be had to the following process:—Dissolve one part of salicylic acid in 600 parts of alcohol, and heat the solution to the boiling-point in an evaporating dish. Draw the plant slowly through the liquid, wave gently in the air to get rid of superfluous moisture, and dry between folds of blotting-paper several times repeated. In this manner the plants dry rapidly, which is a great gain, and they thus furnish specimens of superior beauty. Pharmaciennes—for some of them are in our business, and hope after the month of May to be members of our society—will be glad to know that the addition of a drachm of red Condyl's fluid to the water contained in a flower-vase will preserve the freshness of cut specimens for three or four days.

TEST FOR TARTARIC IN CITRIC ACID.—A ready method of detecting the admixture of tartaric with citric acid is described by M. Caillietet (*Rep. de Pharm.*). One gram (say 15 grains) of the acid to be tested is introduced into a test tube and mixed, by a glass rod, with ten cubic centimetres (say 2½ fl. drachms) of a saturated solution of bichromate of potash. If, after standing for about ten minutes, the mixture shows the orange colour of the bichromate, the acid may be considered pure. With one per cent. of tartaric acid the mixture assumes a coffee-colour; with five per cent., a distinct blackish-brown.—*Canadian Pharmaceutical Journal*.

The Pharmaceutical Council.

THE March meeting of the Council was held on the 6th inst. The following were present:—Mr. John Williams, President, Mr. William Dawson Savage, Vice-president, Messrs. J. B. Bott, Churchill, Cracknell, Gostling, Greenish, Hampson, Hanbury, Hills, Mackay, Robbins, Sandford, Schacht, Shaw.

THE EXAMINATIONS.

The President and Mr. Sandford reported their impressions of the Edinburgh examinations which they had lately attended. Messrs. Corder, Moss, and Taylor had accompanied them from the English examining board, and these gentlemen were expected to give a report of the examinations themselves. Messrs. Williams and Sandford had found the arrangements very good, and both agreed that the Scotch examiners seemed kinder towards the candidates than was the case in London. "They were not more advanced in years," said Mr. Williams; "Not quite so shrewd from school," said Mr. Sandford; "that might be the reason for it." "He," Mr. Sandford, "was sorry to see a great many failures on the day the members of the deputation were there, and this might perhaps be partly accounted for by their presence, which might somewhat embarrass the young men."

Mr. Mackay said the remarkable divergence between the London and Edinburgh results in 1877 (25 per cent. of rejections in the latter city and 48 per cent. in the former) had caused the North British Branch to search their records. They found that if the past five years had been taken the percentages would have been about 39 in Edinburgh and 48 in London.

Mr. Schacht suggested that it would be well if members of the board could take an actual part in the examinations of the other, and several members of the Council favoured this idea. There was a question whether it would be legal, and it was also doubtful if the Scotch examiners could be induced to sacrifice their time necessary to carry out such an arrangement; but it was ultimately resolved to invite the Scotch Board to send two of its members to London in June as visitors, and to refer the question raised by Mr. Schacht to the Law and Parliamentary Committee for consideration.

ANNUAL MEETING.

The annual meeting was fixed for Wednesday, May 15, with a *reception* to follow on the same evening. No refreshments were to be provided.

FINANCE MATTERS.

It was stated that the financial report for the last year shows a diminution of expenditure. The journal marked 158*l.* less loss, and fixtures and fittings also came lighter.—The late Mr. Sagar, Swinton, Lancashire, had bequeathed 100*l.* to the Benevolent Fund, and the committee was now able to purchase 200*l.* of *consols*, making the total invested capital of that fund 18,000*l.*

A BREEZE.

Mr. Mackay told the Council that it had been the custom for twenty or twenty-five copies of the Society's journal to be supplied to the authors of papers read before the North British Branch afterwards printed therein. That was the only reward which the authors received. He had, however, just been surprised to hear from the editor that this concession would be stopped in future. The editor said if these copies were given in one case they must be given in all, and he must have instructions from the Council. Mr. Mackay said if the Council agreed to give these copies he would pay for them himself.

The President was astonished to hear of this, and thought it was a misapprehension on the part of the editor.

Mr. Greenish asked if twenty-five copies was the number which had generally been applied for.

Mr. Mackay said he had once asked for fifty copies, but he had been told that that number was excessive.

Mr. Bott moved and Mr. Savage seconded a resolution that the privilege hitherto enjoyed should be continued, and this was carried unanimously.

LIBRARY, &c.

An apprentice at Boston having refused to pay the carriage for a book he had borrowed from the library, the Library Committee had taken the subject into consideration, and resolved to recommend that the carriage of books lent to assistants and apprentices in the country should be paid one way. This was agreed to. A special vote of thanks was passed to Dr. Redwood for his very able lecture on "Spectrum Analysis."

LAW AND PARLIAMENTARY.

The report of this committee raised discussions on the Dental Practitioners Bill, and on the Weights and Measures Bill. With reference to the first, Mr. Sandford stated that he and others had waited upon Mr. Tomes, who was quite prepared to entertain their objections, but referred them to Sir John Lubbock. That gentleman had written expressing his willingness to amend the Bill so as to meet their views. Messrs. Churchill, Hampson, and Shaw desired that in the event of any examination being established for future dentists, the pharmaceutical examination should be recognised so far as it related to chemistry and materia medica, presuming that these subjects would form part of any dental examination. This part of the report was referred back to the committee for further consideration.

Now that the Weights and Measures Bill had been referred to a select committee, the Pharmaceutical Committee had recommended that an application should be made to be allowed to give evidence. The Council thought this was unnecessary, as the Board of Trade had granted the concession desired by the Pharmaceutical Council, namely, the retention of the apothecaries' weight as a legal standard.

Mr. Betty moved the adoption of the report of the sub-committee appointed to consider any amendments in the Pharmacy Act. Mr. Sandford said the report was a most crude one. Mr. Hampson wished for the resolution to be deferred till the next meeting, and this course was followed.

The Chemists and Druggists' Trade Association.

A MEETING of the Executive Committee was held at the office of the association, 23 Burlington Chambers, New Street, Birmingham, on Friday, the 22nd ult., at 1.30 p.m. Mr. S. U. Jones (Leamington), President; Mr. Thomas Barclay (Birmingham), Vice-president. Present, Messrs. Andrews (London), Arblaster (Birmingham), Churchill (Birmingham), Cross (Shrewsbury), Delves (Exeter), Greaves (Chesterfield), Greenish (London), Hampson (London), Jervis (Sheffield), Reynolds (Leeds), Southall (Birmingham), Walker (Coventry), and the Solicitor of the Association.

Letters were read from Messrs. Earle, Fairlie, Holdsworth, and R. Walker, regretting their inability to attend.

The minutes of the previous meeting of the committee were read and approved.

THE DENTAL PRACTITIONERS BILL.

The Solicitor explained the clauses of the Dental Practitioners Bill that would be injurious to the interests of chemists and druggists who were practising dentistry, if it passed into law.

Mr. Barclay said the Bill, if passed in its present form, would be a serious matter for very many chemists. In a large number of small towns there were no dentists, and it was of importance to the chemists, and a convenience for the public residing in such localities, that the extraction of teeth and other dental operations should be performed by chemists and druggists. He regarded the Bill as one more attempt to curtail the privileges, or rather, he should say, the rights, of the trade, and he would suggest that it be opposed *in toto*.

Mr. Arblaster contended that not only should chemists and druggists in business at the present time be permitted to practise dentistry, in accordance with an ancient custom of the trade, but that any Bill that passed into law should reserve to the rising generation of chemists and druggists the right to add the practice of dentistry to their business if they were disposed to do so.

Mr. Churchill thought the Bill was intended to prevent chemists assuming the title of "Dentist," and not to prevent their extracting teeth. There was no provision in the Bill for the conduct of examinations for registration under the Bill, the only guide being the present standard, which would necessitate a person leaving his business for two or three years to attend courses of lectures at hospitals.

Mr. Arblaster said if the Bill would not prevent a chemist from extracting teeth, it would prevent his recovering the charge for the operation, unless he managed to get registered according

to the provisions of the Bill, and he did not think this would be possible as the Bill then stood. Again, there were many chemists who styled themselves dentists, and it would be a serious matter for them to be compelled to give up a title many would have held for years, and their business would probably suffer in consequence.

Mr. Greenish was of opinion that the promoters of the Bill would remove what was considered objectionable by the Executive Committee.

Messrs. Cross, Delvas, and Jervis said they regarded several clauses of the Bill as hostile to the interests of the trade.

Mr. Hampson said he thought the higher branches of dentistry should be practised only by the professional dentist; he, however, objected to the Bill passing in its present form, and advocated such modification as would entitle any chemist and druggist in business at the present time, who so desired, to be registered as a dentist, and he would move—

That a deputation be appointed by this committee to wait upon one or more of the promoters of the "Dental Practitioners' Bill" with a view to amend the same in order to protect the interests of chemists and druggists in the practice of dentistry; and that should they fail to obtain a satisfactory understanding on the subject, the Law Committee be empowered to take steps to oppose the Bill.

This resolution was seconded by Mr. Barclay and unanimously adopted.

It was moved by Mr. Hampson, seconded by Mr. Greaves, and unanimously resolved—

That the President, together with the London members of the Executive Committee and the Solicitor of the Association, be appointed a deputation to wait upon one or more of the promoters of the Dental Practitioners Bill to urge such modifications in the Bill as shall give to chemists and druggists the right to be registered under the Bill, and such other alterations as they may deem desirable.

THE MEDICAL ACT AMENDMENT BILL.

The Solicitor said he had perused Dr. Lush's Medical Act (1858) Amendment Bill, and no part of the Bill appeared to affect the interests of chemists and druggists.

The President said he was of the same opinion, and he should be glad if the solicitor would report upon pending cases under the Apothecaries Act.

PHARMACEUTICAL INTERFERENCE—THE ETIQUETTE OF THE PROFESSION.

The Solicitor said that before reporting the present position of the actions brought by the Apothecaries' Society against chemists and druggists, he should like to offer a few remarks upon what he could only consider an unwarrantable interference in these cases by Mr. Flux. If his idea of professional etiquette allowed him to act in the way he had by negotiation and correspondence with the solicitor of the Apothecaries' Society without saying a word to him on the subject, and as it were behind his back, he was thankful to say such were not the practices to which gentlemen of his profession usually resort—it was not a line of conduct which would find countenance or encouragement amongst solicitors generally. But to the Executive Committee a more important question was, What had this interference done for the trade? He was compelled to reply that, in his opinion, it had done nothing—worse than nothing. So far from strengthening their position it had speciously, and he believed falsely, represented that they desired to compromise away the rights which it was the duty of the Pharmaceutical Society and of the Chemists and Druggists' Trade Association to protect. It may be asked what concessions had been extracted from the Apothecaries' Society. Again he must reply, None; although Mr. Upton said in his last letter, "I am prepared again to affirm that in the few years during which I have acted as solicitor to the society, I have not authorised any prosecution in a case of pure and simple counter practice, and that I shall not do so so long as I have the honour to hold that office; and I think you may accept this, not only as the course which I should personally pursue, but as the policy of the society." This was no assurance with which any of the gentlemen present could be satisfied, for the very cases on which they were engaged were themselves of "pure and simple counter practice." So that reading the words of Mr. Upton and looking at his acts they were not in any way relieved from the present highly unsatisfactory state of things. Again, supposing the Apothecaries' Society did for the time refrain from actions similar to those now pending, and that they did allow chemists and druggists to practise medicine in simple

cases in their own shops, they would only do so as a favour, and in no way would they concede the point that chemists practise in such cases as of right. The present court of the Apothecaries' Society could pass no resolution which would be binding on their successors, and the result would be that after the lapse of years—many years it might be—the same contest as was then pending would arise again, when the trade might and probably would be in a far worse condition to defend its rights. With regard to the Apothecaries' Company v. Shepperley and the Apothecaries' Company v. Wiggins, statements of defence had been delivered in each case raising all points necessary for the proper trial of the questions involved.

Mr. Andrews was glad to hear such plain-spoken expression from Mr. Glaisyer: he had himself intended to have alluded to the matter. It would appear that the Apothecaries' Society would perhaps allow them to do on sufferance what they maintained they had a legal right to do. He thought it necessary for the association to fight out the question and get it settled on a broad basis.

The President expressed his regret at the position assumed by Mr. Flux.

Mr. Greaves considered it an uncalled-for interference, and thought the committee should express their disapproval of such conduct.

Mr. Greenish said he thought Mr. Upton and Mr. Flux met as friends.

The Solicitor said even if they met as friends he could not absolve Mr. Flux from a breach of that etiquette which, under the circumstances, should first have led Mr. Flux to communicate with him.

DEPUTATION TO SIR JOHN LUBBOCK.

A meeting of members of the deputation appointed by the Executive Committee to wait upon one or more of the promoters of the Dental Practitioners Bill with a view to amend the same was held at the Inns of Court Hotel, High Holborn, London, W.C., on February 28, 1878, at 2.30 P.M. Mr. S. U. Jones, President, in the chair. Present: Messrs. Andrews, Greenish, and the Solicitor of the Association.

A letter was read from Mr. Hampson, regretting his inability to attend the meeting or accompany the deputation.

The Secretary reported having corresponded with Sir John Lubbock, M.P., the principal promoter of the Dental Practitioners Bill, and that he had consented to receive the deputation at the House of Commons on that day at 4 P.M.

Considerable discussion took place on those parts of the Bill affecting the interests of the trade and on the alterations to be suggested to the promoters of the same.

The deputation then proceeded to the House of Commons. The Secretary having introduced the deputation to Sir John Lubbock,

Mr. S. U. Jones said there appeared to be several clauses in the Dental Practitioners Bill, of which the honourable gentleman was the principal promoter, that were hostile to the interests of chemists and druggists, and that the deputation of which he had the honour of being a member was appointed by the Executive Committee of the Chemists and Druggists' Trade Association of Great Britain to wait on the gentlemen who had charge of the Bill with a view to suggest some important modifications in the objectionable clauses. It would appear from a careful perusal of the Bill that, if passed into law, it would prevent all those chemists and druggists who were at that time practising dentistry from continuing to do so, or at all events from recovering any fee or charge, in any Court, for the performance of any dental operation, unless they obtained their registration under the Act, for which there seemed to be no provision in the Bill; on the contrary, they were by the fifth clause debarred from registration, not being "licentiates in dental surgery or dentistry of any Royal College of Surgeons in the United Kingdom, or of the Faculty of Physicians and Surgeons of Glasgow; or at the passing of that Act *bonâ fide* engaged in the practice of dentistry, either separately or in conjunction with the practice of medicine or surgery." This prohibition would be very severely felt by many of Her Majesty's poorer subjects throughout the Kingdom, and it would be a source of great inconvenience to all classes of the public residing in country districts where no professional dentist was to be found. He would suggest to the honourable gentleman the desirability of amending the fifth clause by the addition of the following words to subsection a—"any duly registered pharma-

tical chemist or chemist and druggist practising dentistry at the time of the passing of this Act," or if this were a concession it could not be granted, the addition to subsection *b* of the words—"or the business of a chemist and druggist," in either placing these words at the termination of the sentences. He would next direct the attention of the honourable gentleman to use 7, which provided that "No name shall be entered in a register under this Act except of persons authorised by this Act to be registered, nor unless a registrar be satisfied by sufficient evidence that the person claiming is entitled to be registered." It appeared to be a very open question what would be deemed by the registrar "sufficient evidence" for this purpose. He thought too much power was being placed in the hands of the registrar. Of course, by a further provision in the same clause, any person whom the registrar refused to register could appeal against this decision to the General Council, but it would be an exceedingly inconvenient and expensive process for gentlemen residing at some distance from London; and he would suggest that this power to veto registration should not be placed in the hands of a registrar, but that a clear definition of the meaning of the words being "*bonâ fide* engaged in the practice of dentistry" should be appended to the declaration contained in the schedule to the Bill, and that an attested declaration from persons claiming registration should be deemed sufficient evidence that they were "practising dentistry at the time of the passing of the Act," and entitle them to be registered under the Act.

The Solicitor said he thought it a very important matter that the term "practising dentistry" should be clearly defined in the Bill, and pointed out that in the absence of explanation litigation would probably ensue. He also, alluding to section 13, said as there were powers given in the Bill for the appointment of examining boards it should not be compulsory for persons claiming registration by passing the examinations to walk hospitals or attend several courses of lectures in London, as was necessary for obtaining the degree of licentiate in dental surgery. A proper test, he urged, would be the candidate's fitness to perform dental operations, no matter where or by what means he gained such knowledge.

Mr. Andrews referred to the vested rights of chemists and druggists in the practice of dentistry, and said there were very many members of the trade, particularly in country districts, who practised somewhat extensively. It appeared to him, and he hoped it would appear to the honourable gentleman also, that their interests should be respected and protected. It was usual, he thought, in Bills of the kind they were discussing to preserve the rights of persons practising at the time.

Sir John Lubbock said he was much obliged to the members of the deputation for their kindness in coming there. He would very carefully consider the points referred to, and talk them over with Sir Phillip Egerton, Mr. Tomes, and the medical gentlemen under whose direction the Bill was prepared. He should like to say it was not the intention of that Bill to interfere with the simple operations as extracting or stopping teeth, which did not require any extended period of study, being performed by assistants. Certain things were allowed and no penalties attached, yet they were to be discouraged. The object of the Bill was not to prevent such simple operations as he had referred to being performed upon anyone who liked to submit himself to the same, but to prevent a person holding himself out to the public as being especially qualified as a dentist when he was not so qualified; although, by the provisions of the Bill, an unregistered person would be entitled to recover any fee or charge by legal action, the same did not prevent an unregistered person asking a fee or obtaining it. If they were to amend the schedule containing the blank form of declaration, as suggested by Mr. Jones, they might modify clause 7; but it had not occurred to him that any difficulty would arise on that point. The registrar refusing to register qualified persons would be liable to legal proceedings; but he saw a little difficulty about a person being in a position to satisfy the registrar that he was entitled to be registered, and they would consider that question to see if the promoters of the Bill could in any way remove the difficulty. With reference to the question of vested interests, he was quite disposed to go with the deputation. It was a very important point, and he thought subsection *b*, clause 3, should be modified.

The Secretary said he was pleased to hear from the honourable gentleman that he was prepared to recognise and protect the vested interests of the trade in amending the Bill before the House, and that it was not the intention of the promoters of the

Bill to prevent chemists and druggists extracting or stopping teeth; but he should like to direct the honourable gentleman's attention to a portion of the third clause, which, if passed into law, would preclude a chemist from publicly informing his customers, the public, that he did perform such operations. This clause provided that a person may not use the name or title of dentist, either alone or in combination with any other word or words, "or any name, title, addition, or description implying that he is especially qualified to practise dentistry, unless he is registered under this Act," under a penalty of a sum not exceeding 20*l.*; so that any chemist and druggist exposing the words "Teeth Extracted" or "Teeth Stopped," on labels, placards, brass-plates, &c., would be liable to this penalty, as he would thereby clearly use a "description" implying that he was especially qualified to extract and stop teeth. It seemed an anomaly for a person to be permitted to do certain things, while if he announced to the public that he did them, he rendered himself liable to a heavy penalty; and he would submit to the honourable gentleman the advisability of modifying that clause.

Sir John Lubbock said he should not have thought the words of the Bill would have been open to such a construction.

The Secretary said they were advised by their solicitor that this would be the legal effect.

Sir John Lubbock said he would make a memorandum on the subject, and he thought he should be disposed to erase the words "addition or description" from the third clause, which would remove the objection.

The Secretary inquired if the members of the deputation might be assured that the honourable gentleman would so modify the Bill as to carefully protect the vested interests of chemists and druggists in the practice of dentistry.

Sir John Lubbock assented.

Mr. S. U. Jones then thanked the honourable gentleman for his kindness in receiving the deputation, and for the concessions promised.

Provincial Reports.

ST. ALBANS.

A CHEMIST AND HIS ASSISTANT.

A PRETTY lively row between one of the chief chemists of this town and his assistant occupied the local magistrates on February 13, and caused a good deal of interest among the inhabitants generally. The magistrates were the Mayor (Dr. R. H. Prior), Mr. W. C. Smith, and Mr. C. K. Dyer.

Edward Davenport, chemist and druggist, of Holywell Hill, St. Albans, was summoned by Edward Arthur Holloway, an assistant in his employ, for using insulting words to him on February 4, whereby a breach of the peace might have been occasioned.

Mr. G. Annesley appeared for the complainant, and Mr. P. Dumville for the defendant, who did not appear.

Mr. Annesley asked that the usual custom of calling the defendant outside the door be done, but this was objected to by Mr. Dumville, who said his client was unable to appear, owing to the fact that his only remaining assistant was then in the court waiting to give evidence, and it was impossible for him to leave his shop. Mr. Annesley insisted that the rule be not broken, and his name was accordingly shouted outside the doors, but no answer was returned.

Mr. Annesley, in stating the case, said although he regretted it, he was there to support a most serious charge against the defendant on behalf of his assistant, Mr. Holloway, who charged him with using most abusive language to him on the day in question, and accusing him of robbing him, and of various other things. Mr. Davenport was a man who did not keep any of his assistants very long, and he was told he had had twenty-seven since he had been living in St. Albans, and a great many within the last few months.

Complainant, examined by Mr. Annesley, stated that he was assistant to Mr. Davenport, and had been there nearly three months. He went with a satisfactory character from his last employer. He received notice to leave on January 24, it being part of the agreement that he should receive a month's notice. He was at defendant's on Sunday, the 3rd instant, at about five o'clock in the evening, but was not on duty, when he received a message from a boy who left a prescription, which he said was to be sent down to the Rev. B. Hutchinson's on Monday morn-

ing. The messenger said he was not to wait, because he was in St. Michael's choir. Nothing further occurred till the following morning, when the boy came for the prescription at ten minutes to nine. With the aid of his fellow-assistant he made it up, and gave it to the boy. About eleven o'clock the same boy brought a note from Mr. Hutchinson, which witness had not read. There were in the shop besides himself Mr. Davenport and Mr. D. M. Stewart, his fellow-assistant. The former read the note, and said to witness, "I can see how it is; you would not do it; you are no good to me; you have been doing my business harm ever since you have been here. The sooner I see your back the better." Witness replied, "I will go with my proper wages up to the 24th of this month." Defendant said, "It proves to me on asking for the money that you are not an honourable man. I am sure you are not honest. I believe you have been robbing my till ever since you have been here. You are a most — liar, a — blackguard." He continued, "After what I have said to you no honourable man would stop here. You tell a — lot of lies about everybody in the house, and want to be cock of the house." Complainant replied, "If you will give me half an hour I will go out and consult a friend and tell you whether I go." He went out and returned in about a quarter of an hour, when he told Mr. Davenport he had decided not to leave. Defendant said, "I did not think you would, because you are not an honourable man. If I cannot get you out one way, I will drive you out, and not give you nice roast mutton every day for dinner." To which complainant replied "If you don't choose to find me with food I can go out and buy it." Defendant answered, "And rob my till to do it." The same afternoon, about 3 o'clock, the Rev. B. Hutchinson called, and asked Mr. Davenport whether he did not send medicines out on Sunday; and he said, "Yes, it is the gross fault of this young man," referring to complainant. He added, "He is under notice to leave. I called him a liar twenty times to his face, and insulted him as much as I could do, and now he won't go." Complainant attempted to explain, and Mr. Davenport said, "Don't believe him, sir; he is a thorough liar." Mr. Hutchinson went up again the next day and told the defendant that it was not his (complainant's) fault, for the boy had confessed with tears that he had left word that the medicine was to be sent down on Monday morning. Although Mr. Hutchinson had said it was the boy's mistake, defendant had not offered to apologise. Complainant denied ever robbing the till, and had given Mr. Davenport no occasion for abusing him.

Another assistant and Mr. Hutchinson's boy gave corroborative evidence, and Mr. Dumville for the defence contended that the peace had not been endangered. If summonses were to be taken out for any explosion of strong language he did not know where they would be in St. Albans. The Mayor said that he and his colleagues had carefully considered the matter, and thought it would have been much better if complainant had sent the prescription that night; but they considered that no departure from duty would justify such language, which would have been very bad from a poor man, but from a person of education was much worse. They felt it their duty to inflict a full penalty of 40s. and costs, or 14 days in default. (Great applause in court, which was suppressed.)

DUBLIN.

PHARMACEUTICAL SOCIETY OF IRELAND.

The monthly meeting of the Council of the above society was held at the College of Physicians, Kildare Street, Dublin, on Wednesday, March 6, Sir D. J. Corrigan, M.D., Bart, President, in the chair. The following were present—Dr. Aquilla Smith, Vice-president, Mr. Wm. Allen, Mr. J. G. Boileau, Dr. Collins, Mr. J. Goodwin, Mr. Wm. Hayes, Mr. E. M. Hodgson, Mr. J. T. Holmes, Mr. S. Oldham, Mr. R. W. Pring (Belfast), Dr. Ryan, and Professor Tichborne.

It was resolved "That the sum of 200*l.* be lodged in the Bank of Ireland on deposit receipt," in the names of the Vice-president and Treasurer.

A letter was read from a licentiate of the society stating that in response to an advertisement in the public press from the Guardians of the South Dublin Union, addressed to "Apothecaries and Pharmaceutical Chemists," for candidates for the office of apothecary to the union, he had applied for the vacancy, and that one of the Guardians, who is also a member of the

Pharmaceutical Council, had at the election objected to his candidature on the ground of ineligibility, he not being an apothecary. After some discussion it was resolved to forward a copy of the Calendar for 1878 and to call attention to the 34th clause of the Irish Pharmacy Act and to the letter from the Local Government Board addressed to the clerks of unions, pages 79 and 80 of the Calendar; it was also resolved to send a copy of the letter to the member of the Council referred to.

The following pharmaceutical chemists were admitted to membership of the Society:—William Patrick Connolly, Bruff, Co. Limerick; John William Queale, Terenure Road, Rathgar; Rodolph A. C. Burnes, Geraldine Street, Dublin.

MEMBERS' EVENING MEETING.

The sixth evening meeting of the above society was held at the King and Queen's College of Physicians on Tuesday, February 5, Dr. Frazer in the chair. Mr. H. Draper read a communication on a so-called "Japanese Isinglass," and Dr. Aquilla Smith presented a communication on the "Early History of Jaborandi." These papers will be given in our next issue.

Mr. Conolly sent specimens of *Ergotine suppositories*, which were very generally used by the practitioners in Ireland, and transmitted a formula for making them. His formula was as follows:—

Sapo animalis	..	..	..	..	3 <i>j.</i>
Aq. destillatæ	..	..	..	..	3 ss.
Ergotinæ	..	..	..	..	grs. xxxij.
Glycerini	..	..	..	..	3 ss.

Melt the soap and water with a gentle heat, and add the glycerine, evaporate to get rid of the water, and then add the ergotine, and pour into moulds. If manipulated in this manner it makes a nice suppository, which it is difficult to do with glycerine alone.

The seventh evening meeting was held on March 5, at the Society's rooms, College of Physicians, Dr. Aquilla Smith in the chair.

Mr. H. N. Draper exhibited some beautiful tests for the detection of magenta in wine and pharmaceutical preparations. In these, which are based upon the extraction of the magenta by chloroform, great certainty is obtained.

The secretary, Dr. Tichborne, exhibited, in connection with Mr. Draper's paper, a specimen of spurious syr. rhæados, which had been largely offered for sale by a London firm. It was coloured by magenta, and seemed to be merely simple syrup.

Mr. G. Hardy sent a "Note upon the Action of Carbonate of Ammonia on Citrate of Iron and Quinia."

GLASGOW.

On the evening of February 6 the first annual supper of the Glasgow Chemists and Druggists' Association, Assistants' section, took place in the Regent Hotel, 22 Sauchiehall Street. The numbers present were not large, but were augmented by a deputation from the recently-formed Edinburgh Associations. The usual patriotic toasts were proposed by the chairman, Mr. Wm. Simpson, who afterwards gave "Success to our Annual Gathering," Mr. Walker proposed the "Medical Profession," and Dr. Nairne replied. "The Pharmaceutical Society" was proposed by Mr. McMillan, and spoken to by Mr. J. Bardsley. Mr. Taylor proposed "The Edinburgh Chemists' Assistants' Association," which was responded to by Mr. Young, one of the deputation. "The Strangers," "The Committee," "The Chairman," and "The Croupiers," all shared in the honours of the evening. Several gentlemen enlivened the proceedings with song and recitation.

HULL.

The fifth meeting for the session of the Hull Chemists' Association was held at the Cross Keys Hotel, Market Place, on the evening of February 21. The President, Mr. C. B. Bell, drew the attention of members to the Dental Practitioners Bill. The thanks of the meeting were accorded to the donors of specimens and books to the museum and library. Mr. Baynes, F.C.S., F.R.M.S., delivered a lecture on disinfectants, in which he made very special mention of

mitas, which he believed to be the most perfect product of its kind. On the motion of Mr. J. F. Smith, seconded by Mr. dham, and supported by the president, a vote of thanks was corded to the lecturer.

LEEDS.

LEEDS CHEMISTS' ASSOCIATION.

The fifth general meeting of this Association was held on Wednesday evening, February 13. The chair was occupied by the President, Mr. Jefferson, and after the minutes of the previous meeting had been read and confirmed, a lecture on "The History of a Loaf of Bread" was delivered by Mr. E. O. Town. Having explained that his lecture was originally intended for a mixed audience, and therefore partook more of a popular than of a scientific character, he proceeded to trace the early history of bread, stating that the first mention of it is in a third chapter of the book of Genesis, and it was then most likely made from maize. Bread was generally understood to be baked dough, and as such he should treat it; but it was formerly simply boiled. Many kinds of corn were used in its preparation; indeed, down to the last century, hardly any wheat was used in the north of England; but no doubt wheat was a grain from which bread might now be considered to be prepared. The largest quantity was grown in America, and heavy soils suited it the best.

Having stated that the wheat-plant belonged to the order Gramineæ, and was monocotyledonous, he described its mode of growth, and the composition, organic and mineral, of a grain of wheat; and then proceeded to treat of wheat ash, which, though amounting to only 1.7 per cent., yet contained many chemical substances, aluminium being occasionally one of them; and the liability to err in testing bread for adulteration with alum.

The amount of carbon contained in the wheat-plant was over one-third of its whole weight; so that if the gross product of an acre of ground were 4,800 lbs., that would be equivalent to 1,600 lbs. of carbon per acre, taken from the ground, or some other source, for each crop. Different theories as to whence such a large quantity of carbon was obtained had been advanced, but when the fact that the atmosphere contained over ten times as much as that required was considered, there could be no doubt of its affording the chief supply.

The mode of cultivating the wheat-plant, and the process of grinding the grain into flour were then described, and the custom of rejecting the bran, which contained the most nutritious elements, was censured.

The average composition of bread he stated to be 44 per cent. moisture, about 2 per cent. of ash, and the remainder combustible matter. The amount of gas given off, and its effect in rendering lime-water turbid were shown by actual experiment. The dry distillation of bread crumbs, and the fermentation, maturation, and process of baking bread were described.

A cordial vote of thanks was awarded the lecturer on the motion of Mr. Highmoor, seconded by Mr. Hellowell.

MIDDLESBROUGH CHEMISTS' ASSOCIATION.

A meeting held on Tuesday, March 5, after discussing the sale of patent medicines at reduced prices in grocers', hat, toy, and tripe shops, so much on the increase in this neighbourhood, was resolved to keep to the prices advertised by the makers, and to try and induce makers to advertise them as sold only by chemists. The general opinion of the meeting was that something might be done by the Council of the Pharmaceutical Society towards checking the spread of this injurious free-trade movement, by recommending to the Privy Council the addition to the list of poisons of such patent medicines as contain poison. It was also decided to take steps to prevent unregistered persons from selling paregoric (with and without laudanum), Godfrey's Senna, chlorodyne, cheap nitres, &c., a practice which has lately been increasing very much in the town.

NOTTINGHAM AND NOTTS CHEMISTS' ASSOCIATION.

The usual monthly meeting of this Association was held at Britannia Chambers, Pelham Street, on Wednesday, February 20. There was a large attendance, and the chair was occupied by Mr. J. Rayner. After the transaction of some formal business, the hon. secretary (Mr. R. Jackson) announced the receipt of some donations, amongst which was the "Year Book of Pharmacy," and five guineas from Messrs. Langton, Harker & Stagg, of London. The Chairman then introduced Mr. Major, B.A., F.R.G.S., who delivered an instructive and interesting lecture on "Germs," which was listened to with great attention and loudly applauded at the close. A hearty vote of thanks to the lecturer, proposed by Mr. R. Jackson and seconded by Mr. Parker, brought the proceedings to a conclusion.

FORMULÆ OF SECRET MEDICINES.

(Continued.)

The formulæ given below are translated (by special permission of the author) from a German collection compiled by Mr. Edward Hahn, Apotheker. The names following most of the formulæ are those of the authorities quoted for the analysis. The weights are almost invariably given in metric denominations. A gramme is equivalent to 15½ grains. The prices quoted are the nearest English equivalents to the original retail price.

ROYER'S BEARD-CULTIVATING POMADE (Royer & Co., Berlin).—An ointment of one part pulv. cinchon. rub., and 1½ parts of a hair pomade containing wax. 1 ounce 17 grains, 1s. 6d.—Hager.

BEARD-CULTIVATING TINCTURE (Bergmann, Rochlitz).—A spirituous extract of some agreeable bark, mixed with a little oil of rosemary and thyme. 600 grains, 1s.—Wittstein.

ROYER'S BEARD-CULTIVATING TINCTURE (Royer, Berlin).—10 grammes kitchen salt, 150 grammes French brandy, fictitious and fuselly, and 2 grammes tincture of mace. 3s.—Schädler.

AMERICAN BEARD TINCTURE (Teinture américaine pour la barbe), for dyeing the beard black. Three fluids. No. 1, nitrate of silver solution; No. 2, tincture of galls; No. 3, sodium sulphide solution.

BAY RUM.—One of the highly valued American head-washes, pleasant in use, cooling and cleansing, and promoting the growth of the hair. It is prepared by distilling rum from the leaves of *Myrica acris* (called "Bayberry" in America).

BEEF TEA.—An extract manufactured at Berlin, which contains the nutritive matter of the flesh in the highest state of potency. A pale blood-red (!) jelly, which will not keep long, and after a time passes into a state of odorous putrefaction.—A. Buchner.

DR. BEACH'S SPECIFIC AGAINST HEMORRHOIDS AND STOMACH COMPLAINTS OF ALL KINDS.—A tin box containing about 160 grammes of a fine sulphur-yellow powder, and imbedded in it a vial with 40 grammes of a brown clear fluid. The powder is a mixture of 7 parts of washed flowers of sulphur, 2½ parts cream of tartar, ¼ part of an inferior kind of rhubarb, finely powdered. The drops consist of a solution of brown sugar in strong spirit, with traces of various ethers. 6s.—Hager.

BENEDICTINE'S HEALING-PLASTER (Hauber).—35 grammes of a dark brown plaster, prepared by digesting together 1 part litharge with 2 parts olive oil until they become blackish brown, then adding 4 parts yellow wax, continuing the heat for a short time, and then pouring out.—Wittstein.

BERENIZON (Dr. Charles Wortley).—A preparation for promoting the growth of the hair. Balsam of Peru 3 grammes, castor oil 3 grammes, tinct. cinchona 4 grammes, spirit 85 grammes, rosewater 40 grammes. 3s.—Schädler.

BERGBALSAM.—MOUNTAIN BALSAM (of G. Schmidt, Berlin).—Recommended for hemorrhoids, want of appetite, headache, constipation, &c. Rhubarb 2 parts, cortex frangulæ 10 parts, milfoil flowers (*Achillea millefolium*) 1 part, tansy 1 part, crystallised soda 1½ parts; be digested for some hours in warm water, the fluid expressed made up to 26 parts, 30 parts of sugar

dissolved in it, and lastly mixed with 17 parts of rectified spirit.—*Hager*.

BETNÄSSEN, REMEDY FOR INCONTINENCE OF URINE (prepared by Dr. Kirchhoffer, in Kappel by St. Galle).—Thirty powders, each consisting of 2 grammes ferri carbonas, 4 grammes ergotie pulv., .03 grammes extract. sem. strychni. aquos. The prescription for the embrocation runs—Spirit scrypylli 120 grammes, tinct. sem. strychni. 60 grammes, liq. ammon. 15 grammes. Price for powders and recipe 15s.—*Hager*.

BICKEL'SCHER THEE, for constipation, flatulence, hemorrhoids, loss of appetite, stomach complaints, and similar diseases. Cassia lignea and anise, of each 3 parts; cumin and fennel seed, each 4 parts; senna leaves, 20 parts; to be bruised together. 2½ ounces, 1s.—*Selle and Hager*.

BIELEFELDER TROPFEN—BIELEFELDER DROPS (Bansi).—A spirituous extract of wormwood, unripe oranges, rhubarb, cascarilla, cloves, and gentian.—*Hager*.

BIRKENBALSAM—BIRCH BALSAM (Dr. Friedreich Lengiel).—A cosmetic against wrinkles, small-pock marks, freckles, mole spots, red noses, acne, &c. 5 grammes water glass, 2 grammes potash, 1 gramme soap, 5 grammes gum arabic, 10 grammes glycerine, 400 grammes water. 4s.—*Schädler*.

BISCUITS DEPURATIFS (Olivier) are made with meal, milk, and sugar. Each biscuit contains 1 centigramme corrosive sublimate.—*Foy*.

BISCUITS PURGATIFS (Caroz).—Each biscuit contains 2 decigrammes scammony.—*Reveil*.

BISCUITS PURGATIFS (Sulot).—Each biscuit contains 6 decigrammes scammony.

BISCUITS PURGATIFS ET VERMIFUGES (Ferd. Gräf, Aschbach) contain ¼ gramme resina scammonii in each.

BISCUITS PURGATIFS ET VERMIFUGES AU CALOMEL (Sulot).—There are 3 decigrammes of calomel in each.—*Reveil*.

BISCUITS VERMIFUGES À LA SANTONINE (Sulot).—Each biscuit contains 5 centigrammes of sautonin.—*Reveil*.

BISMUTH POWDER, for beautifying the skin and removing freckles. (From North America.) Consists of calcium carbonate, with much clay, and is free from injurious metals.—*Chandler*.

BLANC DE PERLES.—A cosmetic wash, consisting of a perfumed mixture of spirit and water, with a thick white deposit of calomel and carbonate of lead.

D'ALBESPYRE'S BLISTERING TISSUE.—Lard and ship's pitch of each, 1 part; resina flav. and yellow wax, of each, 4 parts; finely powdered cantharides, 6 parts; melted together, and spread over taffety.

BLATTICIDE, OR MOTH-KILLER (Macks).—3 parts camphor, 1 part each oil of lavender, oil of spike, oil of turpentine, 2 parts benzoin, 32 parts spirit. 330 grammes (10 ounces 58 grains), 2s.—*Hager*.

ELECTUARY FOR CHLOROSIS—FEMALE ELECTUARY.—A greenish-black thick syrup, consisting of sugar, bayberries, carbonate of iron, iron filings, and water.—*Buchner*.

CHLOROSIS POWDER—FEMALE POWDER (Fräulein M. A. Gerzabeck; patented by the Saxon Government).—Consists of a mixture of anise, sugar, and 14 per cent. of iron filings. A chip-box, with 40 grammes, (1½ ounces), 9d.—*Wittstein*.

CHLOROSIS POWDER—FEMALE POWDER (Krüsi-Altherr, Gais, Canton Appenzell), according to Schott and Strauss, is a mixture of violet root, gum arabic, and a tasteless green powder, with 33 per cent. of steel filings. ½ ounce, 4s. According to Hager, it is composed of 2 parts ferri pulvis, with 3 parts powdered sweet-flag root. 1 ounce, 4s. 6d.

CHLOROSIS POWDER—FEMALE POWDERS (Kruse).—Steel filings, starch powder, and knot grass, of each 1 part, Florentine orris root, 4 parts.

CHLOROSIS POWDER—FEMALE POWDERS (Thrusi).—A mixture of 1 part steel filings and 2 parts of a vegetable powder composed of gum arabic, Florentine orris, knot grass, &c. 40 grammes (1 ounce), 4s.—*Egb. Hojer*.

CHLOROSIS WATER (Dr. Ewich) contains in 10,000 parts 11 of sodium carbonate, 9 of sodium chloride, 1½ sodium sulphate, 7 calcium carbonate, and 1·2 iron carbonate with an excess of carbonic acid.—*Hager*.

BLOOM OF YOUTH, OR LIQUID PEARL (G. W. Laird, New York).—A colourless liquid holding in suspension 31 per cent. of zinc oxide entirely free from lead.—*Chandler*.

BLÜTHENHARZ—FLOWER RESIN (Kwizda, Kornenburg).—Against barrenness in domestic animals. A mixture of 9 parts powdered Burgundy pitch with 1 part pine pollen, ¼ ounce, 1s.—*Hager*.

FLOWER DEW (F. J. Weber, successor of Rau, Bamberg).—A flat bottle with the name of Rau moulded on it; its gross weight is more than 80 grammes, but it contains scarcely 22 grammes of a nearly colourless but slightly yellow fluid, consisting of a pleasant aromatic solution of oils of bergamot, lemon, orange flowers, and rose in strong spirit, 6d.

"BLUTANDRANG UND LUFTRÖHREN-VERSCHLEIMUNG (Remedy for congestion and obstruction of the air-vessels), manufactured and sold by the inventor, C. Tänzer, 18 Kesselstrasse, Berlin," is the title of a twelve-page pamphlet, which offers a fluid for 2s., and an apparatus for 6d. For cold in the head, the apparatus, which consists of a small linen cushion to bind over the mouth, is moistened with 10 to 15 drops of the fluid. The fluid (150 grammes) is a mixture of spirit of wine, and acetic ether, in which some arnica, milfoil, &c., have been macerated.—*Hager*.

GOUT AND RHEUMATIC BLOOD PURIFYING TEA (Franz Wilhelm, Neunkirchen).—Equal parts of senna leaves, sarsaparilla root, liquorice, rad tritici, red sandalwood, bittersweet stalks, cut small and mixed. A cylindrical yellow packet, containing 250 grammes of tea in eight parcels.—*Hager*.

BLOOD-PURIFYING TEA (F. Köller, Graz).—Senna leaves, 32 parts; guaiacum wood, 10 parts; juniper wood, restharrow root, rad tritici, dandelion root, chicory root, of each 8 parts; alder bark, 3 parts; sassafras, 2 parts; staranise, 5 parts, dirty and worm-eaten, roughly chopped, and mixed. 100 grammes, 1s. 6d.—*Hager*.

BOCKBIERESENZ, for the artificial imitation of bockbier.—A tincture of 1 part lupulin, 2 parts pyroligneous acid, and 8 parts spirit of wine.—*Hager*.

BONBONS VERMIFUGES OF CAROZ.—A bonbon containing 16 centigrammes of scammony, and 2 centigrammes of santonin.—*Reveil*.

BOONKAMP OF MAAGBITTER.—Dried orange berries, 100 grammes; bitter orange peel, 30 grammes; gentian root, 60 grammes; cascarilla bark, 30 grammes; turmeric, 15 grammes; cinnamon, 25 grammes; cloves, 15 grammes; rhubarb, 7 grammes; 90 per cent. spirit, 750 grammes; water, 1,650 grammes; staranise oil, 40 drops; sugar, 250 grammes digested, expressed, and filtered. 120 grammes, 9d.—*Hager*.

BRÄUNETINCTUR—QUINCY OR BROWN TINCTURE (Netsel Rauschau) an embrocation for the larynx is a mixture of 3 part oil of cloves and 1 part creosote.—*Hager*. According to Leimbach 1 part creosote with 3 parts of a spirituous tincture of cochineal perfumed with oil of cloves. 2½ grammes, 1s.

BRAMAELEXIN—GENUINE ASIATIC STOMACH BITTER (Ch. Ram Ayen, Hamburg).—Cardamoms, cinnamon, cloves, of each 1 grammes; galangal, ginger, zedoary, pepper, of each 30 grammes; wormwood oil, 15 drops; 90 per cent. spirit, 830 grammes; water 330 grammes; digest and filter. 180 grammes, 9d.—*Hager*.

BRANDISH'S ALKALINE (Liqueur de potasse des Anglais, Solut Alkalina Anglicana), used in England to add to meat at vegetables about to be cooked, to help in "drawing" tea at coffee, and as a medicine to neutralise acidity of the stomach at lubricate the digestive passages [die Verdauungswege schlaffriger zu machen]. Preparation:—Crude carbonate of potash 3 parts, wood ashes 1 part, quicklime 1 part, warm water 1 parts. Add to the water the lime, carbonate, and ashes, digest one day, and filter.—*Hager*.

BRANDRETH'S PILLS, much used as a purging pill in North America, consist of gamboge, podophyllin, the inspissated juice of pokeberries, saffron adulterated with turmeric, powder cloves, and peppermint oil. Gamboge is stated to be present Brandreth's pills on the authority of two American druggists at one dealer. The action of the pills does not, however, correspond with that ingredient, for in two persons five pills produce no loose stools. Thirty-six pills sprinkled with liquor powder in a chip box, 1s. 1½d.—*Hager*.

BRITANNIA SILVER.—Under this name there is now being offered to the public at Vienna, and probably elsewhere, under the misleading recommendation that it is a perfect substitute for silver, a heterogeneous metallic composition, in the form of spoons, forks, candlesticks, cups, &c. The Britannia silver is sometimes, or always, light, silvered, Britannia metal (an alloy of 86 tin, 10 antimony, 3 zinc, 1 copper; or of 2 copper, 6 zinc, 21 antimony, 71 tin; or of 1.84 copper, 81.90 tin, 16.25 antimony, and 1 zinc). One firm announces that Britannia silver is silver-white throughout, a colour which can only be obtained in similar alloys by the addition of arsenic. Another firm sells candlesticks of inferior packfong as Britannia metal, and another actually sells tinned Bessemer steel-plate cups as guaranteed Britannia silver.—*Aekerman*.

BROMOCHLORALUM (Tilden & Co., New York), for the removal of bad smells, as a disinfectant, and antiseptic. A fluid, sp. gr. 1.43, containing 27.5 per cent. of solid matter. The latter consists of 18.5 per cent. of aluminium chloride, with chalk and a considerable quantity of alkaline salts. Free bromine is not present.—*H. Endemann*.

BROMTHÉE—BRAMBLE TEA (?)—is a mixture of 5 parts lime lowers *cum bracteis*, 5 parts senna leaves, 5 parts acacia lowers, 8 parts cort. frangulæ, and 2 parts sassafras chips.—*Hager*.

BRUCHBALSAM—RUPTURE BALSAM (Dr. Tünzer).—No. 1: Compound rosemary cerate, nutmeg cerate, red Johannis oil, yellow wax, of each 1 part; fat, 5 parts. No. 2: Mixture of nutmeg cerate, 50 parts; tallow, butter, of each 10 parts, melted and mixed with 25 parts strongest liquor potassæ. No. 3: Compound rosemary cerate, oil of bayberries, of each 2 parts; nutmeg cerate, 4 parts; red Johannis oil, 6 parts; yellow wax, 3 parts; tincture of myrrh and tincture of aloes, of each $\frac{1}{2}$ part; tr. opii, $\frac{1}{4}$ part, melted and heated until the spirit has evaporated. 30 to 40 grammes, 2s.—*Hager*.

BRUCHPFLASTER—RUPTURE PLASTER (Krüsi Altherr).—A spread plaster, the mass consisting of 5 parts Burgundy pitch and 2 parts turpentine. A piece 4 metres long and 16 metres broad costs.—*Waltz and Hager*.

BRUCHPFLASTER—RUPTURE PLASTER (Caspar Menet).—Machine-made paper covered with thin gauze, and thinly spread with a mass of 9 parts wax, 3 parts turpentine, and 1 partlemi.—*Hager*.

BRUCHSALBE—RUPTURE CERATE (Gottlieb Sturzenegger, Aarisau, Canton Appenzell).—A mixture of 50 parts fat and part oil of bayberries. 30 grammes, 5s.—*Hager*.

BRÛCHE, ruptures cured without medicine, operation, or pain, y Lavedan, chemist.—A pelotte containing in it zinc and copper plate on which a solution of the "poudre electrochimique" (common salt) is dropped. Price 15s. to 18s.; worth about 4s.—*Hager*.

BRUSTBONBONS—PECTORAL BONBONS (Fr., Stollwreck, Cologne).—Carageon, 3 parts; Iceland moss, 2 parts; red poppy petals, $\frac{1}{2}$ parts; coltsfoot, 1 part; liquorice, 2 parts; marshmallow root, 2 parts; daisy (*Bellis perennis*), $1\frac{1}{2}$ parts; Souchong tea, 1 part; boiled with 24 parts of water till reduced to half, and the fluid afterwards mixed with refined sugar. Twenty-four packets (80 grammes), 5d.

BRUSTGELÉE—PECTORAL JELLY (Daubitz, Berlin).—A yellowish-brown nearly clear jelly, with a sweet, weak anise, followed by a somewhat bitter taste, made of gelatine, 12 grammes; sugar, 10 grammes; and a herbal infusion, 120 grammes; the latter made from anise, staranise, Iceland moss, &c. 210 grammes, 6s.—*Hager*.

BRUSTPULVER—PECTORAL POWDER (Beliol, Paris).—For chronic pains in the chest. A mixture of 75 parts milk sugar, 10 parts gum arabic, 5 parts Rochelle salt. 60 grammes in a glass jar, with medical advice, 8s.—*Mayer*.

BRUSTSAFT PRÄPARIRTER—PREPARED PECTORAL JUICE (Rudolph Büttner, Berlin).—For coughs, hoarseness, tightness of the chest, &c. An ordinary pectoral tea made of an infusion of red poppy petals, which is boiled to a syrup with sugar.—*Hager*.

BRUSTSYRUP WEISER MAYERSCHER—WHITE PECTORAL SYRUP (A. W. Mayer, Breslau).—4 parts powdered radish extracted with 5 parts water (according to others rosewater), the liquor pressed and filtered. Six parts of the clear liquor digested

with 10 parts of sugar to make a syrup. 250 grammes, 1s. 6d.—*Hager*. Frequently nothing but a simple solution of sugar.

BRUSTSYRUP—PECTORAL SYRUP (Dr. Moth).—A mixture of syrup of marshmallow, 1,000 parts; extract of horehound, 30 parts; oxymel of squills, 50 parts; aq. amygd. amar., 25 parts; aqua. foenic, 100 parts; spirit of ether, 10 parts.

BRUSTWARZEN—MITTEL ZUR HEILUNG WUNDER.—Miraculous remedy for healing sore nipples. (From Paris.) A dirty brownish-yellow, somewhat turbid liquid, smelling of vinegar, and with a taste both sour and sweet. A solution of $1\frac{1}{4}$ parts litharge in 100 parts vinegar; 32 grammes, 4s. 6d.—*Wittstein*.

BRUSTWARZEN—MITTEL GEGEN WUNDER.—Sore nipple preventative. (From Paris; sold by the successor to Frau D.) Acetic acid, 1 part; sugar of lead, 3 parts; camphor, 5 parts; water, 100 parts.—*Terreil*.

BRUSTWARZENBALSAM, RIGAER—RIGA'S NIPPLE BALSAM.—A mixture of the yolk of one egg with 10 to 12 grammes balsam of Peru.

BUCKINGHAM'S DYE for the whiskers; manufactured by R. F. Hall & Co., Nashua, N. H. This whisker dye is an ammoniacal solution of urate of silver, and consists of $\frac{1}{2}$ gramme nitrate of silver, $2\frac{1}{2}$ grammes solution of ammonia, and 40 grammes distilled water. 2s.—*Dr. Schacht*.

BUTTER-PRESERVATIVE PASTE (from Spaa).—Consists of common salt, 52 parts; nitre, 23 parts; syrup, 5 parts. 1 pound, 2s.—*Wittstein*.

BUTTER-COLOURING (from Paris).—A mixture of 40 per cent. of chrome yellow, with some fat coloured with annatto.—*Flückiger and Weil*.

BUTTER POWDER (from the Adler-Apotheke Emmerich on the Rhine).—Bicarbonate of soda, 500 grammes, 9d.—*Dr. U. Kreusler*.

BUTTER POWDER (Lemmel, Schleswig-Holstein).—An impure bicarbonate of soda, coloured with turmeric. A packet of the powder, weighing 120 grammes, costs 6d.; a kilogramme costs 3s. 6d.—*Hirschberg*.

SCHÜHRER'S BUTTER POWDER (Emil Schührer, Mutzschen, Saxony).—This, it is claimed, will considerably increase the yield of butter, shorten the process of churning, and yield a product which will be firm even in the height of summer, well-flavoured, of a handsome colour, and of excellent commercial value. It consists of a tolerably pure commercial bicarbonate of soda, with $\frac{1}{2}$ per cent. of powdered turmeric. 125 grammes, 6d.—*Dr. Peters*.

TOMLINSON'S BUTTER POWDER.—(Tomlinson & Co., Lincoln, England).—Ordinary bicarbonate of soda, coloured with $\frac{3}{4}$ per cent. of annatto. A chest of 4 kilogrammes, 7s. 6d.; a single packet, 160 grammes, 1s. 2d.—*Dr. Karmrodt*.

THE COUNTER PRESCRIBING CASE.

FUNDS WANTED FOR THE PROSECUTION.

The following letter appeared in last week's *British Medical Journal*.

AN IMPORTANT APPEAL.

SIR,—I venture to make an appeal to the readers of the *British Medical Journal* on a matter in which I feel sure of obtaining their hearty sympathy, as it is one which seriously affects the interests of the whole medical profession. You have probably not forgotten the case of the Apothecaries' Society v. Shepperley, which was argued in the Exchequer Court during part of two days last November. It was an appeal from a judgment in the Nottingham County Court, by which a leading chemist and druggist in this town was fined in the full penalty of 20l. for counter-prescribing. On the hearing of the appeal, several counsel were engaged, Sir Henry James leading for the appellant and Mr. Day, Q.C., for the respondents; but, after Sir Henry James had spoken for some hours, and before Mr. Day was heard, the Lord Chief Baron and Mr. Baron Cleasby, who were hearing the case, refused to give any judgment at all, and ordered that a new trial should be had, on the ground of the great importance of the case, and because, in their opinion, the court had not sufficient material before it fully to decide all

the questions in dispute, especially the construction of Section 28 of the Apothecaries' Act, under which proceedings had been taken, a section which is somewhat ambiguously worded, and appears at first sight to exempt chemists and druggists from the penalties inflicted by the Act; and they directed that the case should be removed from the County Court to the High Court of Justice, in order, no doubt, that an opportunity of appealing in the last resort to the House of Lords might be afforded to either party. At the present time the pleadings preparatory to the new trial are being delivered between the parties; but it is doubtful whether the plaintiffs will have sufficient funds at their disposal to justify them in going to trial, and it is quite possible that, at the last moment, the whole case will have to be abandoned. It is to prevent, if possible, so impotent a conclusion that I now venture to appeal to your readers. The nominal plaintiffs in the action are the Apothecaries' Society; that, as is well known, is rendered necessary by the Apothecaries Act; and the Apothecaries' Society, when this case was commenced, gave it their sanction, and promised 50% towards the expenses: a sum which I need hardly say has already been considerably exceeded. The real plaintiffs are a society of medical men in this neighbourhood of whom I am the president, and, as our funds are not large, many of our members feel much reluctance to embark in a course of litigation which may very possibly not come to an end before the House of Lords has given its decision in the matter.

If it were, as at first we thought it would be, merely a matter in our own county court, or which at most would go no further than the court for hearing inferior court appeals, we should have considered it unworthy not to depend on our own resources; but, now that it has become a case of so much larger dimensions, and since we feel that its issue will affect the general interests of the profession just as much as those of our own particular society, we think we are justified in laying the matter before your readers, in order that they may have an opportunity of enabling this most important issue to be decided. The object of the trial, in short—or at any rate one of its objects—is to test in the most decisive and final manner the legality of counter-prescribing, and to define precisely the relative functions of chemists and druggists and medical men. That this object should be attained is to be desired both by medical men and by chemists and druggists; and as the case on the other side has been taken up by the Chemists and Druggists' Association, so we hope that our side will receive the support of the general body of medical men. I shall be happy to supply any of your readers who may wish it with any further details respecting the case.

Contributions or promises of support may be sent to me; to the Honorary Secretary, Dr. Hatherly, of Wellington Street, Nottingham; or, with your permission, to the office of the *British Medical Journal*.—I am, sir, your faithful servant,

GEORGE EATON STANGER.

North Circus Street, Nottingham, March 5th, 1878.

We also append an editorial which appears in the same issue of our contemporary:—

THE RIGHT OF PRESCRIBING.

We publish in another column a letter from Mr. Stanger, of Nottingham, which relates to a matter of great importance. The case of the Apothecaries' Society v. Shepperley has, by the course of events, been transformed into a test-case by which the rights of the profession under the Apothecaries Act will be decided. Previous decisions have already affirmed that the right of prescribing assumed by chemists in what is called counter-practice has no legal existence; and that this habit of counter-prescribing (largely carried on, to the great detriment of their patients and obvious danger of the poorer classes, and to the injury of a large section of the medical profession) is an infringement of the law. The actions in which these judgments have been obtained have been carried on nominally by the Apothecaries' Society; and it will be seen that in this case the Apothecaries' Society has not only contributed its name and authority to the conduct of the case, but has given a donation of 50% towards the expenses. Judgment has once already been given by an able County Court Judge in favour of the plaintiff; but, as is explained in Mr. Stanger's letter, the Judges of Appeal have sent the case back for re-trial, on the ground that the court which gave the judgment had not, in their opinion, sufficient material fully to decide all the questions in dispute. They have, moreover, removed the case from the County Court

to the High Court of Justice, in order, probably, that the opportunity of appeal in the last resort to the House of Lords may be afforded to either party. The costs hitherto have fallen upon a small medical society in Nottingham, of which Mr. Stanger is the representative. It will, we believe, be very generally felt that the costs of a case intended to test the general rights of the profession ought not to fall upon a small section; and, as the question to be decided is one which concerns so large a body of the profession, the funds for prosecuting the case should be furnished by all who are interested in the subject. Directly or indirectly, the profession at large is concerned in it. Under these circumstances Mr. Stanger's appeal is, we consider, founded on equity, and will, we anticipate, meet with a prompt, wide, and generous response from the members of the profession at large.

THE EXAMINATIONS OF THE PHARMACEUTICAL SOCIETY, AND HOW TO STUDY FOR THEM.*

By PHILIP PRINCEP.

THE subject I have chosen to make a few remarks upon this evening is one of the utmost importance to all members of our calling, and especially to the apprentices and junior assistants. It is to them that these few notes are addressed, and more particularly to that portion who intend relying chiefly or entirely on private study. The question each one should ask himself on entering the business is—"How am I to become a pharmaceutical chemist?" By pharmaceutical chemist I do not mean a man who has merely passed the Major examination, but one who, in addition to that, has had a considerable amount of experience in the shop and laboratory, and has acquired those habits of carefulness, order, neatness, and other business qualities for which the pharmacist of the present day is so distinguished, and without which, no matter how extensive his scientific knowledge may be, it is impossible for him to carry on trade with safety and satisfaction to the public and profit to himself. This is the question I am about to attempt to answer to-night. I know I have undertaken a task which I shall accomplish but very imperfectly, but as the paper is to be followed by a discussion, doubtless the points I may omit to touch upon will be brought before you then. In the first place I will say a few words on the subject of "Cram." Possibly such a monster may have existed—we are told on high authority that it was so—but as we have heard nothing of him lately we may, I think, conclude that he is extinct, or at any rate that there is nothing to fear from him. If I understand the word cram aright, it means the knowledge of a large number of facts without understanding the laws which govern them. At one time attempts were made to make us believe that it was possible for candidates to pass the examinations on this system, and that it was therefore desirable for them to pursue their studies at a certain school of pharmacy which then enjoyed, and still has, and deservedly, a high reputation. Perhaps some of you may think I am going to instruct you in this method to-night—if so, you are mistaken—as far as I know there is no royal way of becoming a pharmaceutical chemist. Princes and peasants alike must rough it. But is it really impossible to pass the examinations by this delightful system? I answer, unhesitatingly, It is impossible. A crammed student now would not have the ghost of a chance of success. To entertain for a moment the idea of the possibility of such a thing is an insult to the board of examiners. How can it be possible to hoodwink in that way half-a-dozen gentlemen selected from the chemists and druggists of England for their knowledge, penetration, and probity!

It has always been my opinion, and I still adhere to it, that the Minor and Major examinations should be partly written, and not entirely *viva voce* as at present. According to the present manner of conducting them, a cheeky young man with a large stock of self confidence has an immense advantage over another of a retiring and modest disposition—this should not be. When these two commit their thoughts to paper they are on equal terms, and there is no possibility of an examiner being influenced by a confident and unhesitating manner of answering questions. I also maintain that such questions as "State all you know about aloin, tartaric acid, cyanide potas-

* Read before the Chemists' Assistants' Association on January 9, 1878.

sium," &c., should never be asked except in a written examination. Really good candidates who have not the power of collecting their thoughts quickly are staggered at being suddenly called upon to enlarge upon a subject which would be more suitable for an essay, and when presence of mind is once lost it is not easily recovered.

"To be forewarned is to be forearmed," therefore I strongly advise you on the day of the Minor examination, either to eat a more hearty breakfast than usual, or to take some provisions in your pocket, as you will probably be kept in the room till 4 or 5 P.M., and have no refreshments supplied to you except a cup of coffee. I believe a lunch is provided, but that is for examiners only. It is certainly not right that candidates should be compelled to fast in this way—let each one who suffers from it protest against it in the correspondence columns of the *Pharmaceutical Journal*, and this cause of complaint will doubtless soon cease to exist. There is usually sufficient time to go out for refreshments between examination in the different subjects, and why should it not be allowed?

I now proceed to make a few remarks on

THE PRELIMINARY EXAMINATION.

This examination is a very important one, and its management has recently wisely been given over to the College of Preceptors. A cry has of late been raised that it is too severe, the reason stated being that it is very difficult to obtain apprentices sufficiently well educated to pass it. Well, if they have not sufficient ability to acquire the necessary knowledge to undergo this very moderate test, more moderate than that accepted by any other incorporated body in this kingdom, they would stand a poor chance for the Minor. It would be unfair to the boys themselves to lower the standard, as many might thereby be induced to enter the trade who would discover, after wasting several of the most valuable years of their lives, that they had chosen an occupation for which they were incompetent. Now that it is the general custom for them to pass this, or some other classical examination which is accepted in lieu of it, before leaving school, the standard might with advantage be gradually raised. The lamentable number of failures in the Minor would then, I have no doubt, be considerably diminished. It would be interesting to know the percentage of failures among those candidates who have passed higher classical examinations than our preliminary. We should then be able to judge roughly to what extent the failures are due to deficient education. I fear those gentlemen who are so clamorous on this point are actuated more by a desire to obtain apprentices for the sake of the premium, and having the work done cheaply, than of producing men who will afterwards take a good position in life, and become ornaments to their profession and useful members of society. One subject, which is of immense importance to the pharmaceutical student, is not included in this examination. I allude to geography—when studying for the Minor he has to commit to memory the geographical sources of all the substances of the *Materia Medica*. How much his labours in this direction are lightened, and how much more interesting the study becomes if he possesses a fair knowledge of the position of the countries and chief towns on the surface of the globe! Some acquaintance with the effects of latitude, altitude, and proximity to the sea, on climate, and, consequently, on vegetation, is also very desirable, and well worth the time expended to acquire it. I should like to see this subject added to the other three before long.

If any of you have not yet passed this examination, I strongly urge upon you the necessity of studying for it in earnest, and at once. Do not delay, for until you have removed this slight obstacle you are not in a position to pursue your technical studies, which ought to begin with your apprenticeship, and will require your whole attention. It presents no great difficulty, and by studying under the direction of any schoolmaster it will be overcome in a short time. I shall not detain you by offering hints as to the method of study, as I think I may safely presume you have all passed it.

Those of you who are yet young and have received a good education I would strongly advise to compete for a Bell Scholarship. For some reasons (the chief of which I fear is that the majority of masters will not allow their apprentices sufficient time for study) the candidates for these scholarships are very few. It cannot be because so few are eligible, or sufficiently well educated to try with some hope of success, the subjects being the same as in the preliminary, with the addition, however, of French or German, and an elementary knowledge of chemistry, pharmacy, and botany. If any of you are eligible

by all means compete; if you fail it is no disgrace, and you will never regret the attempt, as you will have gained knowledge which will be useful to you in after life, and also have made considerable progress in your studies for the Minor; if you succeed the advantages are too obvious to require any comment from me.

I now come to the part of my subject which will be of most interest to the majority of students.

THE MINOR EXAMINATION.

The method of study will depend chiefly on the time you have at your disposal. If you are fortunate enough to have three or four hours daily, you may with advantage study several subjects simultaneously, devoting say an hour or an hour and a half to each, or setting certain days apart for certain subjects. If you have only one hour a day, it is unsatisfactory to attempt more than one at a time, or your progress will appear so slow that you will be discouraged; but you should have at least two hours, and if your employer will not grant it, leave him and seek another. Let it be seen that it is no idle boast that

Britons never will be slaves.

Our employers have imposed the burden of examinations upon us, and it is their duty to give us opportunities to gain the knowledge necessary to pass them.

By virtue of a bye-law which has come into operation recently, candidates for this examination must be twenty-one years of age, and have had three years' experience in practical pharmacy. Why age should be a hindrance I cannot imagine; many young men in their teens have passed with great credit, and why should they be deprived of the advantages which they might derive from the possession of the certificate? I know one instance of an apprentice who passed by private study in a most satisfactory manner, if one may judge by the position of his name on the list, when only seventeen years of age. I am persuaded, from my intercourse with apprentices, that this regulation is likely to produce a lower class of students. The first incentive to study is doubtless the desire to possess a certificate, but an apprentice of, say sixteen years of age, finds he cannot obtain it, no matter how diligent he may be, until he is five years older. This is discouraging; in all probability he postpones his studies till he is, say, nineteen, in the interval occupying his leisure hours with frivolous amusements, thus losing three years of valuable time, and perhaps acquiring a distaste for study.

I will now make a few remarks on what I consider the best method of attacking each subject.

1. *Prescriptions*.—The only book I am acquainted with which is a really good one for the student desirous of thoroughly mastering this important part of his studies, is Pereira's "*Selecta e Prescriptis*," published at 5s. It should be in the hands of every apprentice, and be carefully studied, as it contains all the Latin words which are likely to be met with in prescriptions. The first part consists of a vocabulary of words and phrases, which should be committed to memory; after that come the rules of grammar, which, having passed the preliminary, you are supposed to be well acquainted with, therefore, it is not necessary to waste valuable time on that portion; next follow a number of prescriptions in abbreviated Latin, which, if time permits, should be written out in an exercise book in an unabbreviated form, say half a dozen or so at a time, and then compared with the key at the end of the book, taking particular notice what kind of errors you are especially liable to, so that you may carefully avoid them in future. Of course they should also be translated without the aid of the key, but the English need not be written. After this if you do not feel sufficiently confident, you will do well to re-translate the English into Latin, but this will only be necessary in rare cases, as if you know and understand your Latin grammar, and are tolerably familiar with the terms used, it presents no difficulty.

Unless you have met with a great variety of prescriptions you will derive much benefit from a perusal of the valuable collection of autographs in the library of the Pharmaceutical Society; these you should study until you are able to read them with facility.

A general knowledge of posology is also required; this is merely a matter of memory. A good method of learning the doses of the B. P. preparations in such a manner that they will not easily be forgotten is to make out two lists, one of solids, the other of liquids, placing the names of the most potent drugs at the top and the less powerful ones beneath them, arranging

them according to their maximum doses. The dose, in grains or minims, should be placed opposite each drug; they should then be committed to memory. By this means if the student should forget the exact dose of any particular medicine he will probably remember its position on his list, and consequently have an approximate knowledge of its dose.

When reading prescriptions ordering powerful remedies, such as strychnia, morphia, perchloride of mercury, &c., attention should always be paid to the dose, as physicians, like all other mortals, are not infallible, and sometimes make mistakes, which might produce fatal results except for the vigilance of the dispenser. It is the custom of the examiners to test candidates in this way occasionally.

2. *Dispensing*.—This you must learn at the dispensing counter. Before presenting yourself for examination you ought to have considerable experience in this department. I will not detain you by trying to impress upon you the importance of neatness, cleanliness, order, &c.; you have probably heard of it *ad nauseam*. But little is to be learned from books on this subject; you may, however, with advantage read the part on dispensing in Proctor's "Pharmacy" and practise on the formulæ there given.

3. *Pharmacy*.—You are required "to recognise the preparations of the Pharmacopœia which are not of a definite chemical nature, and have well-marked physical characters." As the sense of smell is the chief guide, it is rather awkward if you have a cold—probably colds are very prevalent on examination days. Well, how is this to be done with the least loss of time? Most of you, I have no doubt, spend half-an-hour daily in that intellectual occupation dusting; that is the time: when you have a bottle in your hand observe the colour and odour of the contents, and if you think any two resemble each other closely pay especial attention to them, comparing them frequently. In a short time you will be sufficiently familiar with the smell and appearance to recognise them easily. You are also required to know the composition of them, the proportions of the active ingredients, the method of preparation, and the principles involved in the processes. In order to give you an idea of what you must learn I will take three examples for the sake of illustration. 1. *Tinct. Cinchone Co.*—This contains pale cinchona bark in the proportion of 1 in 10, the menstruum being proof spirit; the other ingredients are bitter orange peel, serpentary root, saffron, and cochineal. The ingredients in a proper state of comminution are macerated in three-fourths of the spirit for forty-eight hours, then transferred to a percolator, and when the fluid ceases to pass the remainder of the spirit is added; lastly, the marc is subjected to pressure, the liquids mixed, and sufficient of the menstruum added to make up for any loss in the process. 2. *Pulv. Ipecac. Co.*—This is composed of ipecacuanha root, opium, and sulphate of potash; the latter ingredient is used merely to divide and dilute the active ingredients; it contains two powerful drugs, ipecacuanha and opium, the proportion of each being 1 in 10. 3. *Ext. Ergotæ Liquid.*—An aqueous extract preserved by alcohol, a fluid ounce representing an ounce by weight of the dry drug. To prepare 16 fluid ounces, a pound of ergot in coarse powder is taken, the oil it contains, which is useless, and was formerly though erroneously supposed to be poisonous, is removed by percolation with ether (the ether being first agitated with water in order to remove any alcohol it might contain, which would dissolve out the active principle), the ergot is then digested for twelve hours in about four times its weight of water; at the expiration of that time it is pressed, strained, and the liquor thus obtained evaporated by the heat of a water-bath to 9 fluid ounces; it is then mixed with 8 fluid ounces of rectified spirit, allowed to stand for an hour for the albuminoid matter to coagulate, and then filtered. You will find your labours in this portion of your studies much lightened if you study in conjunction with the British Pharmacopœia, Griffiths' "Notes on the Pharmacopœial Preparations," or the early pages of "Scoresby Jackson's Note-Book of Materia Medica." In either of these books you will find the preparations of each class arranged in a tabular form, showing at a glance their composition, and the proportions of the active ingredients. The *rationale* of many of the processes is also given. I would particularly impress upon you here the importance of carefully committing to memory the proportion of opium in every preparation into which it enters. A knowledge of the best excipients and methods of manipulation for forming emulsions, pills, &c., is also required. This may be gained from that

portion of Proctor's "Pharmacy" relating to dispensing, and from an exhaustive paper on pills, which we had the pleasure of hearing read in this room a few weeks ago, by Mr. Marshall.

4. *Materia Medica*.—In studying this subject it is advisable to make notes. Begin with the natural order Ranunculaceæ: Take each drug separately and write down the botanical name of the plant or plants from which it is obtained, the part used, whether fresh or dried, the time and mode of collection, the adulterations or substitutions, and the methods of discovering them, the habitat, the preparations into which it enters, and anything else which in reading may strike you as important. Go through the whole of the vegetable and animal *materia medica* in this way, and when done, commit it to memory. But this is not all—you should examine a specimen of every drug, and compare it with the description in your text-book, special attention being paid to such as jalap, ipecacuanha, sarsaparilla, &c., of which there are varieties met with in commerce which, although not destitute of medicinal virtue, should, nevertheless, not be used for making the preparations of the B. P., as they are not derived from the botanical sources stated in that work. In all cases a sample of the spurious drug should be compared with a specimen of the genuine, and the points of difference noted. The text-books most suitable for the Minor student are those by Scoresby Jackson, Garrod, and Royle, either of which will answer his purpose admirably. Do not on any account study such books as "Pharmacographia" and "Pereira" until you are tolerably familiar with the contents of the smaller works.

5. *Botany*.—You must be able to recognise the more important indigenous medicinal plants used in medicine. This presents no great difficulty, as you can see good specimens of them in a dried state in the museum of the Pharmaceutical Society; but, if possible, go and see them in a fresh state in the Botanical Gardens in Regent's Park or at Kew. By thus pursuing your studies in the open air you will be gaining not only knowledge but also something far more valuable—health. A good general knowledge of structural botany is also required; this may be obtained from Cook's "Manual of Structural Botany," which should be studied thoroughly and almost learned by heart, reading at the same time some more extended work, such as Bentley's "Manual." But you must not rely on books alone, or you will certainly fail to acquire a knowledge of this subject, and also to pass the examination for which you are studying. You must carefully examine all the fresh plants which you can obtain, naming each part, and describing its form, &c., with the aid of your books. Do not rest satisfied until you are able to describe accurately, without the assistance of books, any plant you may find, beginning of course with the root and finishing with the flower, fruit, or seed according to the state of maturity. Descriptive models may be found in Cook's "Manual" and Lindley's "School Botany," and should be diligently studied with the plants described whenever procurable, as the best test of a knowledge of structural botany is the power of describing a plant so that another person may distinguish it from all others by the written description.

6. *Chemistry*.—This at the commencement you will no doubt find the most difficult part of your studies, but with industry and perseverance the halo of mystery with which atoms, molecules, quantivalence, formulæ, equations, &c., seem to be surrounded will gradually disappear, and you will be amply rewarded in having some knowledge of the science which the modern art of pharmacy is founded upon, and on the principles of which nearly all the operations performed in the laboratory and at the dispensing counter are dependent for their successful performance. When you consider the vast importance of this subject I am sure you will agree with me that it is worth the expenditure of a considerable amount of time and labour to become acquainted with it.

In the first place, if you have not already done it, you must familiarise yourself with the appearance of the ordinary chemicals of the shop, so that you will be able to recognise the majority of them at a glance, without the necessity of applying chemical tests. Of course in the case of many isomorphous bodies, as sulph. magnes. and sulph. zinc this is impossible, and it is only waste of time to attempt it, as I have seen some students do. The best text-book to follow is undoubtedly Atfield's "Chemistry." Begin by studying the elementary gases, preparing a small quantity of each, and applying the tests described. You will then be in a condition to study the

general principles of chemical philosophy—the *pons asinorum* of chemistry—this you must read until it is thoroughly understood, after which you may pass on to the study of the metals. You should carefully commit to memory their quantivalence and atomic weight—the names and composition of the ores which yield them, the processes adopted for obtaining them from those ores—and the methods of manufacturing their chief compounds, imitating them on a small scale when practicable. You must also know what decompositions occur in their production and admixture, and be able to illustrate them by equations. The acidulous radicals should also be studied in an equally thorough manner. You must on no account omit to perform any of the experiments described under the head of Analytical Reactions, and you should practise the analysis of simple salts until you are able to determine their basylous and acidulous radicals with facility. It is also necessary to study carefully (and practically, if possible) the subjects of specific gravity, density, and temperature; almost any elementary work on chemistry will do for this purpose.

I hope there are none among you who, having passed this examination, are resting content, having done all you are compelled to do. If there are any such, I would remind them that this examination was originally only intended as a qualification for assistantship, and now that the greatest difficulty is over, would urge upon you the desirability of studying and representing yourself for the

MAJOR EXAMINATION.

There exists a widespread idea that it is impossible to pass this examination by private study; that is a great mistake. I number among my acquaintances five who have passed by this means, without any professional assistance whatever, their only way for study being what they could have after business hours. Every one of them passed the first time he presented himself. That School of Pharmacy can boast of such success as that? Let those who agitate for a compulsory curriculum answer. They will now try and indicate what is required in each subject.

1. *Materia Medica*.—The questions asked will probably be very similar to those of the Minor, only of course a somewhat deeper knowledge is expected, especially of the chemistry of *Materia Medica*. The books you have used before might answer our purpose if thoroughly studied, but you will do well to read in conjunction with them "*Pharmacographia*," making notes therefrom, which you may either add to those you have already made, or put on loose bits of paper in your text-book opposite the page to which they refer, so that you can study them and your book simultaneously. A good knowledge of the chemical composition of drugs is required, and you must be able to describe the processes by which the more important alkaloids, glucosides, and other vegetable principles are isolated. But a mere repetition of the process without understanding it will not be sufficient: you must know the reason for taking each step. You must also be practically acquainted with the chief tests, so that you can distinguish the more important alkaloids from each other, as you will be required to do this on the first day of the examination. You must also be acquainted with the methods of estimating the value of important drugs, such as opium, cinchona, scammony, &c. If possible this should be studied practically, as it may be of great service to you afterwards. Valuable information on the chemical constituents of drugs will be found in Attfield's and Muter's "*Manuals of Chemistry*."

2. *Botany*.—An intimate knowledge of structural botany is required, and an acquaintance with the general principles of classification on the systems of Linnæus and De Candolle, as well as some knowledge of vegetable physiology. For studying this subject Bentley's "*Manual*" is one of the best text books that can be used. The whole of that portion descriptive of the elementary structure of plants, the structure and forms of roots, stems, leaves, parts of the flower, fruit, seed, &c., ought to be studied thoroughly and in as practical a manner as possible. Some knowledge of the organs of reproduction of the more important Cryptogams, as ferns, &c., and the manner in which they perform their functions is also essential. The part on physiology should be carefully read through several times. You must be sufficiently familiar with practical botany to distinguish between twenty-two of the more important natural orders. Good diagnoses will be found in Barber's "*Companion to the Pharmacopœia*;" they should be committed to memory and also studied practically, as many specimens as possible of each natural order being examined.

3. *Chemistry*.—In the study of the theoretical portion of this subject you will find Fownes' "*Manual*," exceedingly useful. You should carefully read the introductory part on light, heat, electricity, magnetism, &c., as an elementary knowledge of these interesting phenomena is required. If you have time, although it is not absolutely necessary for passing the examination, supplement this by reading Ganot's "*Physics*." The laws of Chemical Philosophy should be carefully studied from Fownes or some other good text-book, and the nature and properties of the elements and their compounds both organic and inorganic. Qualitative analysis must be diligently studied in a practical manner. Presuming you are well acquainted with the chief reactions of all the metals and important acid radicals, a very good method is to make solutions containing all the alkalies—like the large chart in Attfield's or Muter's "*Chemistry*," and by its guidance practise until you are able to detect them all with facility. After that exercise yourself in the same way with the alkaline earths, the metals the sulphides of which are soluble in acids, those whose sulphides are insoluble in acids, and lastly on Hg(ous), Pb., and Ag., the chlorides of which are insoluble in acids. By working in this manner a great saving of time will be effected, and it has also the advantage of thoroughness, as each metal will be brought under your notice in connection with others which are nearly allied. Then you should get a friend to prepare solutions for you containing two or more salts, and practise on them until you can discover the basylous and acidulous radicals with quickness and certainty. You should also exercise yourself in the analysis of insoluble salts—those most likely to give trouble to the novice are the phosphates and oxalates of lime and magnesia, which, in the ordinary course of analysis come out with the iron. Volumetric analysis must also be studied practically. Excellent instructions will be found in either of the two works on Pharmaceutical Chemistry I have mentioned. For those who are desirous of gaining more than a rudimentary knowledge of it, Sutton's "*Volumetric Analysis*" will be very useful.

[We believe we are right in stating that the author of this very useful paper has been an occasional competitor in our "Corner for Students." Did he find the opportunity thus offered him of testing his chemical skill of so little value that it was not worthy of enumeration as one of the aids available to students preparing for examination?—Ed. C. & D.]

FATHER VINCENT.

A SKETCH OF FRENCH SORCERY.

M. EMILE GILBERT, pharmacien, of Moulins, will be remembered by many of our readers as the author of the "*Historical Sketch of Poisons*," translated by us about a year ago from the original essay which was crowned by the French Pharmaceutical Congress at Clermont-Ferrand in 1876. This accomplished pharmaceutical writer has lately favoured us with another treatise of considerable pharmaceutical and medical interest. Therein he gives a vivid picture of the influence still exercised in many parts of the French provinces by those who claim to hold intercourse with unseen powers. M. Gilbert's sketch is drawn from life and represents chiefly a single individual, who is, however, a type of multitudes. Wizards and witches turn up occasionally in odd corners of England; in France they still exist as a profession. With the progress of education their occupation must be extinguished, but a photograph of one of these lingering relics of a past world cannot fail to be interesting, and any investigation of their pretensions must help to hasten their departure.

* * *

Dreaded as the possessor of terrible secrets, covertly hated, but surrounded with apparent respect and obsequious attentions, the sorcerer wields a tyrannical power over the superstitious minds of the villagers. To them he is the embodied representative of the mysterious hero which the legends of the winter evenings have familiarised them with. In our provinces as in classic story the forces of nature are very often personified—

Tout prend un corps, une âme, un esprit, un visage.

The empire of the powers of darkness is everywhere recognised, and the sorcerer is their minister.

The sorcerer is distinguishable from other men neither by his

appearance nor by his habits. But the air of mystery which he assumes, and his ordinary speech, soon make him recognisable. Like the oracles of old, he affects an enigmatic and sententious language. His speech bewrayeth him.

The eagle, we are told, permits no other bird of prey to hunt in the same district as that which he has reserved for himself. The sorcerer likewise rules solitarily in his respective canton. The secrets of his profession are transmitted by initiation from father to eldest son, and with these he is allowed the sole prerogative of casting and removing spells, of charming and uncharming men and women, houses, stables, and animals. How could he fail to be the object of a tremulous admiration, seeing that he can command the frost, the thunder, the rain, and the hail; that he can assure the success or failure of actions-at-law; that he can grant luck to gamblers; that he can ensure the fidelity of wives; can secure for his clients exemption from military service; and, most important of all to most of them, has control committed to him over the lives and health of their cattle? This last is their greatest lever with our peasants, so prompt to cry with the hero of Pierre Dupont—

J'aime Jeanne ma femme, eh bien! j'aimerais mieux
La voir mourir, que voir mourir mes bœufs.

The formulas which these men mutter in drawing and monotonous voice are not easy to catch. They consist of a conglomeration of French, Latin, and meaningless words, of sacred and profane origin, curiously jumbled together. *Jehovah* and *Dominus vobiscum* are favourite openings. *In principio erat verbum* is the commencement of a phrase which finishes with the Hebrew-looking but in reality senseless words *Tu Phantu*. Sometimes we have the Latin and its translation put side by side, as for example, in driving out an evil spirit, "Lève-toi, surgat, surgat, lève-toi." Probably many of them imagine the "surgat" to be the proper name of the spirit to whom the conjuration is addressed.

Mixed with fragments of Biblical phrases, the sorcery of France retains many traces of its Druidic origin. The dwarfs, the giants, the white ladies, and the fairies have not been wholly displaced by the hagiography of Christianity. The miraculous fountains of St. Martin, St. Mayeul, and St. Odile were formerly the gifts of our native heathen gods, and these and many of the names of places curiously record the long contest which the church had and the many compromises necessary before it could finally conquer and absorb the superstition of the people.

The maxim of Linnæus, *Nihil per saltum facit natura*, is applicable to sorcery. The links of the mysterious chain which connects our wizards with their Druid ancestors are clearly traceable, and the works of the old chroniclers afford us frequent glimpses of the progress of the practice. The physician of Theodosius the Great, for example, Marcellus Empiricus de Bazas, had a distinct faith in the therapeutic value of magic formulas. He publishes his aphorisms in verse, thus:—

Namque res est certa salutis,
Carmen ab occultis tribuens miracula verbis,

or sometimes in rhythmical prose:—

Terram teneo, herbam lego,
In nomine Christi prosis ad quid te collige.

This last quotation was to be used in gathering "the British herb," and it then acquired the property of curing sciatica.

Ten centuries after Marcellus, Paracelsus does not hesitate to declare that "words sometimes possess magical virtues not less than those of plants." Paracelsus died in 1541; twenty years later Dr. Foulhoux states in his "Venerie" that magic formulas had lost nothing of their empire over the minds of the peasantry, and were also much believed in by the unlearned gentry. He gives on the authority of a Brittany gentleman a recipe "said to be of singular effect in the prevention of rage for dogs which had been bitten." It was to write on a small piece of paper the following in two lines:—*Fram qui ranca-fram castratrem castratogue*; and to put this writ in an omelette which the bitten dog was to swallow.

Was it that medicine, distrustful of itself and seeing the frequent sterility of its efforts, felt it prudent to invoke the aid of mysterious forces, of saints, or of Satan, according to the piety or impiety of its practitioners? We might so judge from the subjoined quotation from a work printed in 1699, in the reign of Louis XIV., and written by Pierre Hutyer, who a few years later became Dean of the College of Medicine of Moulins:—

"I exhort the sick," said he, "to prefer spiritual remedies, such as prayers, alms, and other acts of devotion approved by the Holy Catholic, Apostolic, and Roman Church, and above all

the Sacraments, to those which physicians can employ, for we ought to have but a slight confidence in these in proportion to that which we should place in those Christian remedies."

Dr. Foulhoux had stated that he himself put no faith in the remedy of the Brittany gentleman; the College of Medicine of Moulins, however, after examining the doctrine of Pierre Hutyer, approved it, and declared it to be "conformable to the teaching of Hippocrates and of the moderns!"

How is it that Pierre Hutyer and his colleagues should not have understood that even from the Christian standpoint such a view of spiritual things was most rash? It was the assumption that the Almighty would multiply His miracles, that is to say, would interrupt the regular order of natural laws, whenever He was required to do so, merely to serve private, and often not very important, purposes. Far more truly Christian was the expression attributed to Ambrose Paré, "Je les paise, Dieu les guerit"—another form of the common saying, "Heaven helps those who help themselves."

We have thought it interesting to show how this sorcery, which exists still in France, took its birth in the thick forests of old Gaul, and how in this, as in so many other things, we prove ourselves the true sons of the earliest known natives of this land. Assuredly we have not left as an exclusive possession of our ancestors that ardent passion for political discussions which divided and thus enfeebled them, and at last surrendered them to the yoke of the Romans; a deadly passion which sows enmity between men who should be friends, which caused the ruin of ancient Gaul, and which may again desolate France.

* * *

Close to a modest town in the department of Bourbonnais, the name of which we need not mention, but which is fairly rich and fairly populous, which possesses its curé, its notary, its magistrate, its registrar, its schoolmaster, its pharmacien, and its gendarmes, that is to say, contains a decent group of educated and sensible inhabitants, on the borders of the neighbouring heath stands a house of simple appearance, occupied by a peasant of about 60 years, known publicly as Father Vincent, but spoken of in whispers as the sorcerer or the gongueur.

His dwelling stands solitary in a bare and melancholy district where the shrill music of the grasshopper is interrupted only by the monotonous and melancholy tune of the cuckoo. Near the house a duck-pond, a pig-house, a well, and other like rural additions give it life and relieve its solitude; within it consists of a living and sleeping room on the ground-floor, with an attic or loft above. You might see in a corner of the room a small library, on the shutters some birds of night nailed by their wings, and in the garden a few medicinal herbs, such as mint, balm, fennel, thorn apple, henbane, &c. These surroundings and the nervous, mysterious manner in which the villagers approach that doorway would tell you that under that modest roof dwells one who knows more than our philosophy could teach him.

Father Vincent is generally regarded as a cattle doctor especially; but he claims to be also a physician for diseases of humanity, and he asserts that his remedies are more rational and of better temper than those prescribed by diplomaed doctors and prepared by breveted pharmacists, who, protected by the laws, "soil their compounds with the fat of Christians and the corporality of the world."

Father Vincent is a tall, vigorous man, sententious and emphatic in his speech, and reserved in manner. He wears a large fur cap, a blouse in summer, a thick woollen jacket in winter. He has a stately air and a penetrating eye; he salutes majestically, and to give himself time to reflect before answering questions addressed to him, he takes a large pinch out of an enormous snuff-box with the unction of an eighteenth-century prelate. He never goes out without a massive stick, which hangs on his arm by a leather strap. This stick is of great importance; it is a branch of elder, cut on the day after All Saints' day; the pitb removed, and an iron ferule fixed on one end. The inside had then to be filled with the two eyes of a young wolf, the tongue and heart of a dog, three green lizards, three hearts of swallows dried in the sun and sprinkled with saltpetre, seven leaves of vervain gathered on the eve of St. John the Baptist's day, and a various-coloured stone found in a peewit's nest; the whole finished and stoppered by a knob of boxwood.

During the day he visits the farms of the neighbourhood, dispensing health or sickness to the cattle, giving milk to the cows, stopping the supply of eggs or increasing that supply to a

marvellous degree. No veterinary surgeon, no matter how skilful, could inspire the peasants with half the confidence or half the fear they have in and for this necromancer. The labourer returning from the fair with his dearly-purchased ox may meet our friend, who can, if he be so minded, by looking at the animal in a peculiar way, "lodge a spell under its hair," and unless the poor owner of the bewitched bullock should meet with an experienced cowherd who can tell him how to deliver his ox from the evil by rubbing its hair the wrong way, the spell will establish itself permanently in his shed. He terrifies his credulous clients when in the treatment of sick cows he prescribes *dragon's blood*; he plunges them in admiration when for diseases of the spinal marrow he recommends a secret remedy which he says is far better than the *Baume de Poule et de Coq* (*Baume d'Opodeldoch*) which the apothecaries sell. Some of his prescriptions are absurd, and intended only to work on the imagination; others are based on scientific formulas, and may often prove serviceable. Thus, for carbuncles in oxen he orders a poultice to be made with the earth from a molehill; for cows which lose their blood, a drench composed of milk and gunpowder; for eye diseases in cattle, the skin of a toad, dried and powdered, and blown into the affected eye. Has a beast lost his appetite, theriacum will restore it by warming his stomach. The mouth disease has found its way into a flock; Father Vincent arrives, enters the fold, and seizing the first sheep which presents itself, blows into its mouth, at the same time pronouncing these cabalistic words:—*Brae, Cabrae, Caraba, Cad-brae*; then he pushes the animal violently into the midst of the flock, which will be cured by contact with this one; so at least he asserts; and if half the flock should die in a few days, as will probably be the case, the poor shepherd dare not make the smallest complaint lest a worse evil should befall him.

In the treatment of horses suffering from colic, Father Vincent adopts a more solemn procedure. Sent for by the farmer, he approaches the stable, and before crossing the threshold, cries, "Grey horse" (or "Brown horse," as the case may be), "whichever of the thirty-six sorts of disease thou hast, may the blessed St. Eloi cure thee." After pronouncing these words in an accentuated tone, he hands to a groom a bottle containing a draught for the horse. He is careful, however, not to distribute this renowned preparation indiscriminately, for he is anxious to circumvent the curiosity of rivals or unfriendly critics. We have only been able to obtain some of the precious liquid, therefore, after considerable difficulty. We find it to consist of an infusion of elder and camomile, with some sal ammoniac, vinegar, and anti-scorbutic syrup. It is to be remarked that if the remedy fails the responsibility falls on St. Eloi, who has probably figured in the formula with a view to such a contingency. The saint, however, does not share the little crown which the consultation costs.

The *Garde des Troupeaux* is another specific, which is compounded with much mystery, and which brings to Father Vincent no small profit. This is the process:—A secret rendezvous is appointed with the person desiring to purchase, and Father Vincent visits the farm. He is taken to the flock which his incantations and medicines are to preserve from all evil, and seizes a sheep at hazard and bleeds him. The blood flows into a plate which contains a certain mysterious salt, the preparation of which has been discovered by the study of some ancient manuscripts. While the blood runs the sorcerer utters these words: "Grappin,* I take thee, I am waiting for thee." The bleeding is stopped, and the operator then cuts a piece of horn from the animal's foot and places it on a square of new linen. He pours over the horn some of the blood with the salt contained in it, adds a tuft of wool, and then pours another layer of the thickened blood. Then he picks up the corners of the rag and ties it up with a thread. When the charm is meant for horses a little bunch of horsehair is substituted for the wool. The pellet thus manufactured is then handed to the client, and it will be his duty to rub each animal with it as he departs from the fold, shed, or stable for three, seven, nine, or eleven consecutive days, according to the degree of vigour which it is desirable to impart. If he should omit to touch any one, that animal will at once indicate the neglect by going raving mad.

Before he bestows the precious treasure on the anxious customer the following sort of consecration has to be pronounced:—Holding the pellet over the beasts, the sorcerer addresses it thus: "O thou who hast been formed to keep this flock in good health, I pray thee by the power of glory to keep

them safe and sound, eating well and drinking well, and growing big and fat." There must be no witness to this ceremony but the believer; any mockery would cause the charm to lose its virtue, and, worse than that, a "venomous" spell in its place would fall upon the farm and its inhabitants.

That the magic pellet may maintain its virtue intact, it must be preserved with the greatest care from all damp. It is generally entrusted to a reliable shepherd, who keeps it in his bosom. If it should fall into bad hands, good-bye to the flock; they will all perish. This is how the unfaithful and malicious holders of it may turn it into a curse instead of a blessing. Cutting the pellet into pieces the fragments are hidden sometimes in molehills, sometimes in frog-ponds, sometimes along with the tail of a cod fish in ant-hills. The burial is accompanied with the imprecation *Maudition, perdition*. A week later the fragments are collected, dried, and powdered; the powder is then sprinkled over the pasture where the flocks feed, and soon the animals waste away and die.

A malicious servant can bring about this disastrous result without the aid of sorcery. It is only necessary to impregnate the pasturage with some repugnant odour, asafetida for example, and the animals will avoid the infected nourishment and soon pine. But the credulous farmer is persuaded that a spell has been cast on his meadows, and he therefore has recourse to the good offices of a superior sorcerer who comes and mutters some magic words over the fields and then manages to get the flock removed to another meadow until the first has been purified. It is not rare for these sorcerers to hunt in couples, sharing the plunder of their victim.

* *

We shall never know the full amount of the tribute exacted by skilful imposture from human foolishness. And unfortunately this tribute is not levied only on the ignorant. Our judicial annals furnish more than one example of grave, honourable, reputable magistrates, reasonable on all other matters, but treating charms and sorcery as realities, and punishing the professors criminally. Take, for example, the following instance, quoted from Commissioner Delawarre's "Treatise on the Police," which will show that the trade of sorcery has not always been free from peril. It relates to some shepherds of La Brie, who had conspired to exploit the district, and who, notwithstanding the severity of the laws, spread terror by causing the death of numerous animals, and attempting at times human life likewise. According to this narrative several arrests were made, and it was established beyond doubt that charms and evil spells were the cause of the injuries. The prisoners admitted in the course of the trial that they had cast a spell over the cattle belonging to a farmer of Paey, and they explained their process. They put a certain compound into earthen pots and buried these in the meadows where the sheep fed, or near the doors of the stables. The drug they used was composed, they said, of blood, caterpillars, rotten toads, and a mineral powder which was suspected to be arsenic. They had directed their malice against this farmer to avenge one of their number whom he had discharged. They refused, however, obstinately to divulge the spots where the vessels had been concealed, for, if they should do so, said they, and the charm should be removed, the one who had placed it there would die instantly. The men were condemned and separated, but still the authorities sought to find the terrible charm. So they bribed another convict, named Beatrix, to worm the secret from one of the shepherds, named Hocque, who worked at his side. Beatrix was furnished with the means to make Hocque drunk, and then led him to talk about his crime. He drew from him that a certain shepherd named Bras-de-Fer, still living in the district, alone knew where to find the charm, and could remove the spell by his conjurations, and in his intoxication Hocque was induced to write to his son bidding him to ask Bras-de-Fer to exercise his skill. He forbade him, however, to tell Bras-de-Fer that it was he (Hocque) who had concealed the charm. The next morning on awaking from his drunken sleep, Hocque remembered what he had done. With frightful yells and screams he sought Beatrix, and would have killed him if he had not been prevented by the officers. The letter, however, was sent. Bras-de-Fer came to Paey, and after many contortions and imprecations he found the charm which had been placed for the horses and cows, and burned it in the presence of the farmer and of his servants. Suddenly, however, he seemed smitten with remorse, said that it was his friend Hocque who had placed the charm, and that he had died a few minutes previously. This was indeed the case. At the very moment when

* Grappin is a provincial title of the devil.

the charm was removed Hocque, a robust man, expired in his cell. Bras-de-Fer was then asked to remove the charm which had been placed over the sheep. This he refused, saying that that had been placed by Hocque's children, and he did not wish to kill them as he had killed the father. On his continuing obstinate, Bras-de-Fer was arrested, and with Hocque's two elder sons and his daughter, and two other shepherds, was hanged and burned, and Hocque's three other children were banished for six years.

The law is more sceptical in these days. But if it has ceased to punish the sorcerer as such, it can serve out hard measure to the cheat and the poisoner, and what is needed is to teach our peasantry that the Courts of Justice possess a counter charm more potent than all the spells and incantations of the sorcerers, and that when they are appealed to, the whole gang of these rogues will find it high time to pack up their pellets, their salts, their magic sticks, and the rest of their apparatus, and leave the country which they have in truth cursed too long.

We have yet to describe Father Vincent as a human physician, and that will form the second part of this sketch.

NAMES OF BRITISH MEDICINAL PLANTS.

By W. G. PIPER.

Tobacco.

WERE it necessary to justify our choice of this plant as the subject of a few notes, we might point out that our title does not exclude any plants which are used as medicines in Britain. One, at least, of the species of *Nicotiana* is called English Tobacco, and this plant is directly connected with the subject of our last paper by the fact that it was known to the sixteenth and seventeenth century herbalists as a species of *Hyoscyamus*.

The literature of Tobacco is more profuse than that perhaps of any other plant. As it was discovered at a time when the intellect of Europe was displaying an activity which has hardly yet been surpassed, we do not find that the origin of its names is involved in obscurity, except where gross carelessness has come in. All, or nearly all, that can be said on this subject was said in all the civilised languages of the time at least two centuries ago.

When Columbus and his companions reached the New World they found the natives smoking a herb called "Cohiba," in a tube called "Tabaco." They brought back the drug, but do not seem to have been the means of introducing it to the European world. At the time of its first introduction there was considerable uncertainty as to its correct name, and two other of its Indian titles appeared in the literature of the day. These were "Piciolt" and "Petum." The latter of these was adopted in botanical literature, and *Petum* masculine or male was a name which bade fair to outstrip all competitors, and obtain the world-wide circulation since given to Tobacco. Curiously enough it has supplied the most usual name for the drug in the Breton language, a dialect of Celtic fast disappearing from the north-west provinces of France. *Butum* is the name for Tobacco in that tongue, and from it we have a large family of derivatives, such as *Butumein*, to take Tobacco, more especially to smoke it; *Butumerez*, a woman who smokes or otherwise uses it, &c. *Petum* itself is one of the names still given to the drug by the Tupi Indians, natives of the Amazon region (see C. F. P. von Martius's "Beiträge zur Ethnographie und Sprachenkunde Amerika's"). Other closely-allied Tupi names are "petume," "pety," "pytyma," and "pyter," which all mean "to smoke." "Pytybao" means both Tobacco and the pipe. John Minshew, the worthy "Ductor in linguas" (A.D. 1617), most sapiently suggests that this Indian word is derived from the French "pet," a word not known in polite circles, the connection between the two being their unsavoury smell.

But although still supreme in Lesser Britain and Brazil, *Petum* was quickly supplanted by other names, which have less right to its office. In the year 1560 Jean Nicot, a native of Nîmes, "Conseiller du Roy François II et Maître de Requestes" of the Royal Court, was at Lisbon as the French Ambassador to the Portuguese Court. He was, like many men of his day, not only statesman, but author and investigator. He wrote in after years a French and Latin dictionary, entitled, "Thrésor de la langue Françoisse," published at Paris, A.D.

1606. In the year in question some Flemish merchant presented him with the seeds of a valuable Indian remedy just received from the New World. Nicot cultivated it in his garden, and thence distributed it to those of his friends. Hence we are told it was called *Herbe de l'Ambassadeur*. Among others who received the seed was Catherine de Medici, Queen Dowager of France. At her special request the plant was dubbed *L'herbe de la Reyne*, *Catherinaire*, and *Medicée*, so that Her Highness might have three chances of sending her name to posterity on the back of a valuable drug. Nothing further was wanted, however, to make Tobacco popular in France. Nicot, in his "Thrésor," named the new remedy *Nicotiana*, or *Nicotiane*. This, at various times, became *Nicessiane*, or *Nicosiane*, and in Portuguese was *Nicociana*. As all knew, this title has completely displaced the more august titles borrowed from the Queen Dowager. Contemporary with Nicot was Cardinal de Sainte Croix, who was sent as Papal Nuncio to Portugal. On his return to Rome he took some seeds with him, and accordingly, as we are told by a French work, the plant was called *Herbe de Sainte Croix*. Nicolas Tornaben, an Italian prelate and legate at the French Court, sent seeds to his uncle Alphonse de Tornabon, "Prelat de Bourg," who is said to have introduced it to Italy. Hence it was called by the Italians *Ternabona*, and by the French *Herbe de Tornaben*. Hence also, perhaps, the other name, *Herbe de la Grande Prieur*. *Herbe propre à tous maux*, *Sana sancta*, or *Saine saincto* (French); *Panacea*, or in French *Panacée*, *Herba sancta* (Latin); *Herbe sainte ou sacrée* (French); *Hierba santa* (Spanish); *Hierva sancta* (Portuguese); *Heilig Wundkraut* (German, holy woundwort); and *Indianische Wundkraut* (Indian woundwort), are all names which were given to Tobacco when it first became known on account of its medicinal virtues, which were supposed to be little less than miraculous. Many amusing instances of this belief might be quoted. We select two from the diary of that worthy man, Master Samuel Pepys. On June 5, 1665, he says, "This day, much against my will, I did in Drury Lane see two or three houses marked with a red cross upon the doors, and 'Lord, have mercy upon us!' writ there, which was a sad sight to me, being the first of the kind that, to my remembrance, I ever saw. It put me into an ill-conception of myself and my smell, so that I was forced to buy some roll Tobacco to smell and to chew, which took away the apprehension." On another occasion he gives us a circumstantial account, how, returning home from some fête, one of the carriage horses fell ill of the staggers and was like to fall down, and how the coachman got down and cut the horse's tongue and tail to bleed him, and then blew some Tobacco into his nostrils, "upon which the horse sneezed, and by-and-by grew well and drew us all the rest of the way as well as ever he did." Between the plague and the staggers is a wide gap, and a drug applied to both, as well as to the intermediates, is worthy of the name *Herbe propre à tous maux*, *Panacea*, or *Herba sancta*.

Lest it should be without a Greek name, Rencalmus coined that of *Blennochois*. In modern Greek it is termed "Taupakos." Thevet, commemorated in "Thevetia yccotoli," the Mexican drug, is responsible for Angoulmoisine, Jacques Veyras for Piperine, and Camerarius for *Sana Sancta Indorum* or *L'herbe vulnenaire des Indes*.

The name Tobacco we have left till last, as about it but little can be said. Applied properly to the pipe it has been barbarously transferred to the drug, and with the drug has been carried all over the world. The European names in common use are but repetitions of the names *Tabac* or *Tabacco*. We have already mentioned that the modern Greek is *Tampakos*. Even in India we have such variations as *Tambak* in use among the native tribes. The common belief that it is to be derived from the island of Tobago cannot be maintained in the face of the statements of the early voyagers. Phillips, in his "History of the Cultivated Vegetables," ii. p. 337, says, dogmatically, but with how much truth the reader will judge: "Tobacco was first discovered by the Spaniards, in South America and in a province of Yacatan called Tobacco, from whence it obtained the name, and not from the island of Tobago as several authors have stated."

A curious fact in the history of this plant is the belief entertained by the peasantry not very long ago, that its use had driven away the fairies. It is a matter of fact that fairies ceased to be believed in, and that Tobacco began to be used about the same time, and it is quite possible that the spread of new ideas and the corresponding growth of intellectual vigour which the voyages and discoveries of the day produced did

ally drive away the fairies by producing that chillingicism so fatal to all such beliefs. The names of Tobacco illustrate the way in which all language grows. When an idea first presents itself to men each names according to the feature which strikes him most forcibly. This produces a multiplicity of names for the same object, which is found in the earliest or least-known parts of the history of each thing. Something unknown to us gives one particular a preponderance over all others, and in the struggle for pre-eminence these gradually fall out of use and are forgotten, or, like the Breton butuun, linger on in forgotten corners of the world. What made the world at large choose Tobacco as the name of this plant we do not know. Certain it is that there is a copious list to select from, and certain it is that all others have fallen out of use. When we find that a thing has but one name in many languages we may be sure that that thing is of importance or of great age. When we find many names for one thing we may be equally sure that the thing is of little value and little known, or that it is but just coming into use.

WATER PURIFICATION.

At a meeting of the Society of Engineers, held on Monday evening, March 4, in the Society's Hall, Victoria Street, Westminster, Mr. R. P. Spice, President, in the chair, a paper was read by Mr. J. Walter Pearse on "Water Purification, Theory and Industrial." In his opening remarks the author stated that until the metropolis was supplied with water from purer sources, private filtration was necessary, and this implied chemical purification as well as mere mechanical filtration.

Great diversity of opinion existed as to the relative value of various substances used as purifying media, and also as to the form of filter.

After describing the earliest attempts at the purification of water by means of porous stone or sand, sponge, and vegetable charcoal, the author referred to the several filters most commonly known at the present time, remarking that the chief characteristic of most of them was the employment of a filtering medium in a granular form, which was highly objectionable, for the reason that in a very short time every particle of the medium becomes coated with a slimy deposit from the water, which no amount of washing will remove.

In the Silicated Carbon Filter the material employed is natural carbon agglomerated with bituminous matters, which are afterwards burnt off in a kiln, leaving a solid slab or block of a porous structure. The great advantage of this form is that the impurities deposited on the filtering medium can be easily removed by brushing or scrubbing. A large diagram of the Silicated Carbon Main Supply Filter was exhibited, showing an extremely simple arrangement by means of which the whole of the water entering a building is purified before use, and the speaker concluded with a reference to some remarkable experiments of Professor Wanklyn, showing that the silicated carbon filter has the power of removing strychnine and other substances from solution.

After a few remarks from the chairman Mr. Blunt, in opening discussion, said that the very interesting paper which they had just heard referred to some experiments of Professor Wanklyn, and he noticed a peculiarly incredulous smile and shake of the head on the part of the chairman and the gentleman on his left, at the statement that the professor had drunk a quantity of the solution of strychnine after filtration. He held in his hand the latest edition of Dr. Wanklyn's book on "Water Analysis," in which there is a detailed report of these experiments, and it will there be found that the professor used solutions of morphine, quinine, and strychnine of a known strength; that he passed these solutions once through a silicated carbon filter, that all traces of the various substances had disappeared, and that he afterwards drank about half a pint of the strychnine solution without detecting the least bitterness or experiencing the slightest ill effects. Was it at all likely that Professor Wanklyn would commit himself to such statements as these unless he was perfectly satisfied as to their truth? The reason that these substances had been employed was that they all contained nitrogenous organic matter, which by Dr. Wanklyn's system of analysis could be expressed in terms of albumenoid ammonia.

Professor Wanklyn said that he had much pleasure in confirming all that Mr. Blunt had stated with regard to his experiments. He had the most perfect confidence in the ammonia process of water analysis, and was prepared to stand or fall by it. That process would detect the least trace of nitrogenous organic matter in water, and he could only repeat that after the most careful examination of the strychnine solution which had passed through the silicated carbon filter, he had failed to detect such a trace. He therefore came to the conclusion that the strychnine had been decomposed and rendered perfectly innocuous by passing through the filter.

Professor Bischoff asked what was the use of these gentlemen going about talking of these experiments? Was it likely that either strychnine or morphine would ever be found in drinking-water, and, therefore, of what consequence was it whether a filter removed them or not? Would Mr. Blunt say whether the silicated carbon filter removed bacteria from water as the spongy iron filter did? If it would not do that it was of no use. He characterised the experiments of Professor Wanklyn as "all humbug."

The President here called the speaker to order, and requested him to avoid the use of personal observations. The discussions of this society could not be allowed to become the vehicle for advertising the merits of certain filters; but he presumed that Professor Wanklyn had merely made his experiments with a view of shewing that certain substances held in solution could be removed from such solution by the mere process of filtration.

Professor Bischoff begged to withdraw his observation.

Professor Wanklyn, in explanation, said that the chairman had rightly defined his object in making the series of experiments. No one in his senses would expect to find strychnine in drinking-water, but it was employed in this instance on account of the strongly-marked characteristics which it possesses. The solution before filtration showed 5.20 milligrammes per litre of albuminoid ammonia, but after filtration the proportion was reduced to 0.04 milligrammes per litre. As to the question of bacteria, he was not prepared to say whether silicated carbon would destroy them or not; all he could say was that for removing organic impurities from water he had found it vastly superior to the spongy iron.

The Secretary, Mr. P. F. Nursey, thought our present water supply was quite good enough for all practical purposes. The great evil was that householders, as a rule, were not sufficiently careful to have their cisterns cleaned. If people would only have this done every three months or so, he did not believe that filters would be necessary. Some of those which had been described this evening were of such a complicated nature that they required an engineer to understand them, and they would be utterly useless in the hands of ignorant or inexperienced persons.

Mr. Dibdin spoke strongly in favour of solid carbon blocks or slabs as a filtering medium, and urged their extreme simplicity as well as great superiority over any substance in a granular form. So far as cleaning cisterns went, it was of course a very necessary operation, but it would not purify an impure water, and they must remember that some of the brightest and clearest water might contain a deadly poison in solution.

Several other gentlemen severely criticised the complicated structure of some filters, and were unanimous in expressing an opinion that simplicity of construction was absolutely necessary in a filter intended for ordinary domestic use.

Mr. J. Walter Pearse replied briefly to the observations which had been made as to the structural defects of some of the filters, but declined to enter into the chemical or microscopical part of the question.

A vote of thanks to the lecturer terminated the proceedings.

THE IATRO-MATHEMATICAL SCHOOL OF MEDICINE.

By W. B. A. Scott, M.D.

IN a previous article I tried briefly to indicate the relation in which the allied or ancillary sciences stand to the practice of medicine, my aim being to show that, while their aid is indispensable to furnishing the healing art with a scientific basis, yet their special laws can seldom if ever be directly converted into therapeutic dogmas. As a striking illustration of the evils

attendant on this latter course of procedure, it has occurred to me that a short account of the once celebrated school named in the heading of this article may not be out of place.

It is not contended that the laws of the animated organism are in any way different in essence from those which regulate inanimate nature; that the "vital principle," whatever that may be, supersedes or sets at defiance any of the material laws to which its earthly tenement is amenable, or that, strictly speaking, there is one code of laws for the animate and another for the inanimate creation. Yet, whether we choose to say that the complex conditions of the organism are such as to disguise the operation of physical laws as manifested in simpler forms, or that the concurrent and co-ordinated action of a great number of simple physical laws in one organism manifests itself to us rather in the results of complex derivative laws of the preceding than of the simple physical laws themselves—whichever mode of expression we may adopt, it is certain that when we enter the domain of biology we find it convenient to formulise our general principles in other expressions than those which were found adequate to classify the phenomena of the inorganic kingdom. This may be owing to our imperfect knowledge; and just as Professor Huxley hopes and believes that by the advance of the science of "molecular physics" we shall one day be able to see our way as clearly from the constituents of water to the properties of water as we are now able to deduce the operation of a watch from the form of its parts," so, the time may come when we shall be able to trace the process through which the molecular forces of the protoplasm reach their combined expression in what is now termed "vitality." But, provisionally, at least, the word is convenient, and the biologist who, in the present state of our knowledge, seeks to eliminate what it denotes from his conceptions, or even from his expressions, will do so to his cost, and even although he may himself be preserved from extravagance by his own acuteness and balance of mind, he is sure, sooner or later, to find disciples who will carry his one-sided system to every length of absurdity and folly. This is what befel the great Des Cartes, who may be regarded as the true father of the iatro-mathematical school of medicine.

It is not necessary here to examine the entire physical system—still less, the philosophy—of this profound philosopher, of whom it may almost be said, in the words of Bacon, that he "took all knowledge for his province." But I think I do no injustice to his physiological doctrines in stating that he regarded the animal organism as a mechanical instrument and attributed its vital functions to the operation of the laws of statics and hydraulics, which laws he assumed as the basis of his system. He distinctly asserted the immateriality of the soul, regarding the latter as the principle which set the machine in motion, illustrating the difference between the soul and the body which it directs by the difference between a watch-maker and a watch. It must be admitted that this was not a very felicitous comparison, since the relation of a watchmaker to a watch is more analogous to that of the Creator to the organism as a whole than of that of the soul to the body: a better illustration would have been the relation of the elasticity of the mainspring to the works which it sets in motion. In the system of the iatro-chemists the fluids of the body had been principally regarded; it has been wittily said of some physicians of this school that they looked upon "the solids of the body as the mere creatures and appendages of the fluids, all but utterly deprived of any other standing in health or disease than as the field on which the fluids execute their *devoirs* when they happen to be sound, or perform their dyscrasic ebullitions when they are diseased." In the system of the iatro-mathematicians, on the contrary, the solids played far the more important part, even although they were regarded as mere inanimate channels, or rather as a group of tubes composing one machine. The various fluids of the body became mixed by their transit through the different tubes, and no more complex forces than those of cohesion, weight, and attraction were ascribed to the containing solids. With regard to the contained fluids, however, Des Cartes adopted a theory nearly if not quite identical with that of Van Helmont respecting ferments, not merely in assuming these to be the causes of all movement in the former, but also in ascribing their source to the "nether," which seems to correspond to the gas of Van Helmont. But here, it must be confessed, there is much obscurity in the language of Des Cartes and his successors, for in some places they speak of the soul, in others of these "ferments," and in others again of the containing vessels themselves as the

original spring of motion. Des Cartes thus explained the phenomena of secretion and excretion:—The ultimate particles (not atoms) contained in the fluids are spherical, cuboid, or pyramidal; the pores of the various secreting organs are circular, square, or triangular; thus, as by means of a sieve, each organ receives its appropriate secretion. It is interesting to note that while the spirit of his system is elsewhere, as a rule, more in harmony with that of the "dogmatists" or "rationalists," we here meet with a doctrine not unlike that of the "Methodists." No doubt all this presented physiology under a very mechanical aspect, as, indeed, it was intended to do, nor did the adherents of this school find any fault with the nickname of "hydraulic engineers" which was liberally bestowed upon them. Kurt Sprengel remarks that the members of the iatro-chemical school might, on account of their fondness for referring every natural and morbid process to fermentation, have been with equal propriety twitted with the *sobriquet* of "vintners."

The rise of a school is seldom so much the work of any one man as the result of the conditions of the period in which it takes its origin. The Reformation in Germany, it has been well remarked, would have occurred even although Luther had never been born; the old English *régime* would have been abolished even had Cromwell never existed; and, without deciding upon the claims of priority of Newton and Leibnitz with respect to the discovery of fluxions, there can be no doubt at the stage at which mathematical knowledge had arrived in the time of those philosophers, that the discovery would have been made by others, even if they had missed it. The concurrent causes which co-operated with the spread of the Cartesian philosophy to the establishment of the iatro-mathematical school were the rapid advances in the sciences of pure and applied mathematics which ensued, especially in Italy, upon the revival of learning; the discovery of the circulation of the blood, in the mechanism of which so many statical and dynamical principles are involved; and, perhaps, as a subsidiary, the invention of the compound microscope, the first of which is by some stated to have been manufactured by Fontana in 1619; but its influence is not likely to have been very great, since, owing to defects in the earlier compound microscopes, Leeuwenhoek and Boerhaave continued to employ the simple instrument at a much later period.

It is clear that the Cartesian physiology, imperfect as it is, was at least a great step in advance of the scholastic jargon and logomachy which it superseded. Unfortunately, when applied to the practice of medicine, it produced a jargon hardly less unmeaning than that which it had displaced. The "error loci" is scarcely a less wild hypothesis than the most baseless of the scholastic or "dogmatic" theories, and it is really pitiable to think of such a man as Boerhaave having been to so great an extent drawn aside from the sure path of clinical observation, in which he had already made much progress, by the attractions of a system which had little but its apparent simplicity to recommend it. But, waiving for the present its application to the practice of medicine, one obvious objection to the Cartesian physiology cannot fail to strike the reader—it leaves almost entirely out of account the influence of the fluids on the solids; and although, in his adoption to some extent of Van Helmont's doctrines respecting ferments, Des Cartes seemed to strive to incorporate something of chemistry in his physiological scheme, and Boerhaave subsequently pushed this attempt much farther—so far, indeed, as to become in some measure an advocate of the humoral pathology—still the two elements, the chemical and the mechanical, always remained distinct, and were never so combined as to give a substantial unity to the system. This is in part to be attributed to the fact that in the seventeenth century the sciences of pure and applied mathematics were on a fair way towards maturity, or, at least, they were comparatively free from error so far as they went, so that, however much might yet remain to be learned, little had to be unlearned, whereas the chemistry of the period was no better than a farrago of the reveries and vagaries of spagyrist and alchemists. A system compounded of such heterogeneous ingredients could not fail to present a motley appearance.

Although the characteristic doctrines of the iatro-mathematical school may clearly be traced to Des Cartes, yet Borelli has in general received the distinction of being its putative father. This celebrated mathematician and physician was born at Naples in 1608, and, having completed his education at Rome under Castelli, was invited to teach mathematics at Messina. Removing thence to a professorship at Pisa in 1656, he lectured

mo years with great applause, and published many seiond medical treatises, but subsequently returned to Messina. n thence by political troubles, he was invited to Rome by tina, Queen of Sweden, the patroness of Des Cartes and other philosophers, who was then residing in that city, continued to enjoy her protection and favour until his in 1679.

mechanical principles are manifestly directly applicable to a section of the study of the animal frame, and, where so able, Borelli was usually most felicitous in their applica- In his great work "De Motu Animalium," on which his chiefly rests, and which was dedicated to Queen Christina, ose expense it was printed, he furnishes a clear and ample ation of muscular movement on mechanical principles— and ample, that is, so far as the movement itself is con- . The nature of muscular contractility it was reserved aller to elucidate, taking occasion to illustrate this in the of birds, the swimming of fish, and the creeping of reptiles, l as in the motions of flexion, extension, and so forth of m and other parts not directly concerned in locomotion. g the bone as the lever, the muscle as the motor power articulation as the fulcrum, he clearly shows, by the ce of the deltoid, what a vast loss of muscular power bly takes place, the lever here being one of the third .i.e., one in which the power acts between the fulcrum and ight. He is, perhaps, not sufficiently careful to point out, gh he does refer to the subject, that this loss of power ot occur in the case of all the muscles, since in the flexion femur by the rectus we have an instance of a lever of the order, and the skull in its movements upon the atlas es an example of the first order of levers. He also ns the further loss of power due to the obliquity of the p of most muscles to the axis of the bones to which they are ed. But he is not equally happy in his endeavours to in the proportion and amount of this loss, while he more unfortunate in his attempts to estimate numerically vers of the different muscles. The contractile force of the ne considered to be represented by a weight of 180,000 lbs., estimated the equivalent of the work done by that viscus e course of one day as amounting to a weight of 000,000 lbs. He seems to have wholly overlooked the of the diaphragm in respiration, which he ascribes entirely external and internal intercostals, committing the further r of attributing the same action to both sets of muscles, s the former are elevators and the latter depressors; but ond part of his work, in which these investigations occur, hat which does him most credit, and need not be further red here.

immediate successors of Borelli, perceiving the inade- of the theory which supposed the nature of the secretions determined by the forms of the imaginary pores in the ry organs, in relation to those of the equally hypothetical s of the circulating fluid, superseded, or, perhaps, rather mented, this by the consideration of the diameter of the their convolutions, and the angle at which they branched n the stem. This was a great step in advance, for there little doubt that these circumstances do exert a distinct, not a paramount, influence. In fact, they may be said ish the only visible conditions of such differentiation, e o relation has been discovered between the structure various glands, or of their nerves of supply and their ve secretions. Tears, milk, and the pancreatic juice are ferent things, yet the histological elements of the lacry- mammary glands and the pancreas are nearly identical. or J. H. Bennett remarks:—"The arrangement and forms us in the capillaries have much to do with the functions rgans they supply. Where the plexus is dense, the cir- is more active, and rapid changes are favoured, as in the liver. Where, on the other hand, the plexus is large, as bones, a tendency to mineral deposition is manifested. he vessels are formed into tufts, as in the kidney, an tion to the circulation is produced, which favours the on of water, &c." Still, with all this, the explanation a imperfect, unless we admit the operation of an elective of the tissues, which, provisionally at least, we may al, even while we admit that it may in the last resort upon powers inherent in the ultimate molecules of these

above modification of Borelli's views, being, as we have al inadequate to furnish a complete physiological theory, one of his pupils, further elaborated the chemical

element in his master's teaching, as some of his other disciples had developed the mechanical. While homologating all that had already been done in the latter department, he added that it was necessary to assume the existence of a special "ferment" in each secreting organ as a determining factor in the differentiation of its product. He regarded fever as the result of a putrefactive process in the blood, caused, however, not by a ferment, as the iatro-chemists had taught, but by some motor derangement. He further considered that the mutual collision of the blood-corpuscles, and the friction of the same against the coats of the blood-vessels, were factors in the various normal and morbid processes. In the next century, Dr. Barry advanced the theory that this gradual attrition of the vascular coats was the cause of death. "Dr. Johnson mentioned Dr. Barry's system of physic. . . . 'His notion was that pulsation causes death by attrition, and that, therefore, the way to prolong life was to retard pulsation.' Soon after this he said something very flattering to Mrs. Thrale, which I do not recollect; but it concluded with wishing her long life. 'Sir, said I, 'if Dr. Barry's theory be true, you have now shortened Mrs. Thrale's life, perhaps by some minutes, by accelerating her pulsation.'" (Boswell's "Life of Johnson," sub. 10, April, 1776.) Before leaving the subject of Bellini, I shall quote the following criticism upon him from his admirer Boerhaave, which will serve to show that all the laborious investigations of the former had failed to yield much practical benefit, even in the very department in which his knowledge was most extensive:—"Bellini on the pains in the head and breast and fevers is absolutely the best author that ever was, but not in respect of method of curing. He wrote admirably well of prognostics and diagnostics, and, indeed, as often as I turn over this author, I cannot believe his books to be the work of one man, but that he collected what was communicated to him by a great many others. In the apoplexy he teaches us what is antecedent, concomitant, and subsequent. He brings in anatomy, and says in such a part there is such a matter, which has such an efficacy; scarce any man reasoned better." [But he didn't cure: see above.]

The iatro-mathematical school gained comparatively few followers in France, for the French in general were warmly prepossessed in favour of the iatro-chemists. Chirac, however, left a legacy to found a professorship at Montpellier for the exposition of the iatro-mathematical doctrines; but the testator's intentions were not carried out. Claude Perrault, too, advanced a theory of the production of the voice based on the principles of this school, and his doctrines received further development at the hands of Dodart. This was very much a revival and expansion of the doctrine of the ancients, who compared the vocal apparatus to a flute.

In England, where the fame of Newton favoured in some measure the adoption of the doctrines of this school, William Cole advanced a theory of fevers on mechanical principles, supplemented with certain chemical hypotheses. The following brief sketch will show its absolute worthlessness in a practical or even a pathological aspect:—The nervous system comprises all the muscular and cutaneous parts of the body. The movement of the nervous fluid is determined by mechanical laws and the relations of the particles. When foreign particles come in contact with the relaxed origins of the nerves, a general tension of the system occurs, and a concussion of all the component parts of the nerves, and this constitutes the essence of fever. The varieties of type depend on chemical causes, nitrous particles giving rise to quotidiens, and acid to tertians. Blood-letting is the prime remedy in fevers, because it relieves tension, &c. It was scarcely worth while to abandon the "primary and secondary qualities," "faculties," and so forth of the ancients if the moderns had nothing better than all this to replace them. William Cockburne, advancing in the same direction as the immediate followers of Borelli, suggested that the nature of the various secretions might be modified, not merely by the calibre, mode of origin, and so forth, of the vessels, but also by their distance from the centre of circulation, as this influences the rate of flow of the blood. Keill instituted experiments to determine the total force of the heart, which he estimated at five ounces. Borelli had, it will be remembered, estimated it at 180,000 lbs., so the disciples of the new school were no more harmonious than modern physiologists. J. Jurin wrote in confirmation of Keill, and estimated the total force of the heart at 15 lbs. 4 ozs.

De Moore, professor at Harderwyk, announced, with a degree of solemnity befitting so auspicious an event, that he had discovered the great secret which gave him a key to the whole of

biology. *Parturiunt montes*, &c. Everything, it seems, was explained by the pressure of the contained blood on the containing vessels. Not only does this furnish an ample explanation of the varieties in the secretions, and so forth, thereby forming the basis of a rational physiology, but it renders the same service to pathology also, since all diseases depend on fluctuations in the amount of this pressure, which is excessive in acute diseases and defective in chronic. He remarked that if a vessel of water be emptied at some height above the earth's surface, the watery particles scatter themselves apart in their descent, adding that this phenomenon throw great light upon the functions of the secreting organs. With the record of this crowning folly we may take our leave of the Transalpino members of the iatro-mathematical school.

In Italy itself the school appeared to much greater advantage. The Italian followers of this doctrine were, for the most part, men of varied and extensive acquirements and keen penetration, who readily saw the absurdity of expecting the sciences of pure and applied mathematics to furnish any indications for guidance in the practice of medicine. In learning and ability they far surpassed their brethren of the iatro-chemical school. None seemed to have understood better than they did the essential difference between theory and practice. Baglivi, for instance, expressly denied the applicability of mechanical laws to the practical part of medicine, and derided the idea of ever attaining to therapeutic certainty by means of mathematics. Theoretically, he remarked, it is legitimate to endeavour to explain anatomical structure and physiological action on mechanical principles; even chemical phenomena he deemed capable of such an explanation. The teeth he compared to scissors, the stomach to a bottle (not a very happy comparison), the arteries and veins to hydraulic tubes, the heart to a pump, the intestines to sieves, the thorax to a bellows-bag, the muscles to levers. The principles of the lever and the wedge, considered in connection with the shape of the ultimate particles of matter, would, he thought, suffice to explain the chemical processes going on within the body. But in all practical matters we must have recourse to the experimental methods of Hippocrates and Sydenham, viz., that of clinical observation. The true sphere of mathematical and mechanical science is also well indicated by Donzellini:—"Since all nature has been constructed by the Creator on mathematical principles, and the activity of the powers of nature consists in the carrying out of the laws which the Creator has impressed on matter, it behoves the physician first of all to learn the operations of nature from experiment, and then to endeavour to express the laws which these obey in mathematical formulæ. Mathematics are indispensable in every department of physical research, and are applicable to physiology, as well as to every other department of natural science. But, far be it from an intelligent iatro-mathematician to seek to apply them to the practical part of medicine; far be it from him to look for certainty where we must content ourselves with probability, or, at most, with such approach to certainty as can be derived from experiment in the present or the past."

It is true that at the present day the advance of physical science has enabled us to give a far more adequate explanation of many physiological phenomena by means of physical laws. The discovery of endosmosis and exosmosis has helped us greatly here; while our improved knowledge of chemistry has even more contributed to demonstrate the identity in principle of many of the operations going on inside the body with those witnessed in the world without. Traces of a disposition to revive a modified form of iatro-mathematics and iatro-chemistry may have been noticed even in our own times, but such attempts have generally been short lived; and I think we may safely say of the schools of Des Cartes and Sylvius that they have fallen like Lucifer, never to hope again. With respect to the former, while cordially acknowledging the services rendered to science by those of its members who recognised the true sphere of their labours, we cannot help being struck with its utter failure in a practical point of view—its failure not merely to discover rules applicable to the treatment of disease, but even to get rid of the baseless theories and cloudy verbiage of which Des Cartes so justly complained in the practitioners of his own day. It failed even to stand alone; for Des Cartes himself, and, still more, some of his followers, found it necessary to piece out their theories with scraps borrowed from the iatro-chemists, which they never succeeded in so far assimilating as to produce an integral though composite whole; the supplementary matter remaining to the end an extraneous and ungraceful adjunct. Useless and ungainly, the

pathological theories of the iatro-mathematicians had not even the attraction of novelty to recommend them. If they substituted relations of form and space for the relations of the "primary and secondary qualities" of the "Dogmatists," they had been done by the "Methodists" before them; and, indeed, the principles which form the basis of the iatro-mathematical pathology are developed in full detail in the second book of *Lucretius*. They were as purely hypothetical as the "qualities" or the "faculties;" no one professed ever to have seen a spherical, cuboid, and pyramidal particles or the circular, square, and triangular pores. And, although some among them, as, for instance, Boerhaave, practised with eminent success, this was because, in practical matters, their good sense led them to be guided, not by this or that speculative theory, but by the results of clinical experience.

TESTING THE DOCTOR.

THE New York *World* tells a good story of a medical action in a Kentucky Court. A doctor named Royston had sued a farmer named Peter Bennett for an account long over for attending Bennett's wife. The doctor proved his number of visits, their value according to local custom, and his own authority to do medical practice. The counsel for the defence told his client that the physician had made out his case, and there was nothing wherewith to rebut or offset the claim, the only thing left to do was to pay it.

"No," said Peter; "I hired you to speak to my case, and not to speak."

The lawyer told him there was nothing to say; he had looked on to see that it was made out, and it was.

Peter was obstinate, and at last the learned gentleman told him to make a speech himself, if he thought one could be made.

"I will," said Peter, and proceeded forthwith:—

"Gentlemen of the jury: You and I is plain farmers, and we don't stick together these 'ere lawyers and doctors will get the advantage of us. I ain't no lawyer nor doctor, and I ain't no objections to them in their proper place; but they ain't no farmers, gentlemen of the jury. Now, this man Royston was new doctor, and I went for him for to come an' doctor my wife's sore leg. And he come an' put some salve truck onto it, and some rags, but never done it one bit of good, gentlemen of the jury. I don't believe he is no doctor, no way. There doctors as is doctors sure enough, but this man don't earn no money; and if you send for him, as Mrs. Sarah Atkinson sent for a negro boy as was worth \$1,000, he just kills him, and wants pay for it."

"I don't," thundered the doctor.

"Did you cure him?" asked Peter, with the slow accents of a judge with the black cap on.

The doctor was silent, and Peter proceeded:—

"As I was sayin', gentlemen of the jury, we farmers, when we sell our cotton, has got to give vally for the money we get, and doctors ain't none too good to be put to the same rule. As I don't believe this Sam Royston is no doctor, nohow."

The physician again put in his oar, with, "Look at my diploma if you think I am no doctor."

"His diploma!" exclaimed the new-fledged orator with great contempt. "His diploma! Gentlemen, this is a big word printed sheepskin, and it didn't make no doctor of the sheep as first wore it, nor does it of the man as now carries it. A good newspaper has more in it, and I p'int out to ye that ain't no doctor at all."

The man of medicine was now in a fury, and screamed out, "Ask my patients if I am not a doctor!"

"I asked my wife," retorted Peter, "an' she said as how I thought you wasn't."

"Ask my other patients," said Dr. Royston.

This seemed to be the straw that broke the camel's back, for Peter replied with look and tone of unutterable sadness:—

"That is a hard sayin', gentlemen of the jury, and one that requires me to die, or to have powers as I've hearn tell ceased to be exercised since the Apostles. Does he expect me to bring the Angel Gabriel down to toot his horn before his time, and cry aloud, 'Awake, ye dead, and tell this court and jury your opinion of Royston's practice?' Am I to go to the lonely

chyard and rap on the silent tomb, and say to them as is st at rest from physic and doctor-bills, 'Git up here, you, stato if you died a natural death, or was hurried up some pectors?' He says, ask his patients, and, gentlemen of the they are all dead! Where is Mrs. Beazley's mau, Sam? ask the worms in the graveyard where he lies. Mr. te's weman, Sarah, was attened by him, and her funeral app'nted, and he had the corpse ready. Where is that y Bill as belonged to Mr. Mitchell? Now in glory an' ex-sin' his opinion on Royston's doctorin'. Where is that baby of Harry Stephens? She are where doctors cease from blin', and the infants are at rest.

Gentlemen of the jury, he has et chicken enough at my e to pay for his salve; and I furnished the rags, and I don't ose he charges for makin' of her worse, and even he don't nd to charge for curin' of her, and I am humbly thankful he never give her nothin' for her inwards, as he did his r patients, for somethin' made um all die mighty suddeu—" ere the applause made the speaker sit down in great con-n, and in spite of a logical restatement of the case by the sel on the other side the doctor lost, and Peter Bennett

METHOD IN MADNESS.

murder has its apologists as undoubtedly belonging to the tino arts, surely the inventor of the following ingenious dle is entitled to a dishonourable niche in the temple of tic malefactors. A lady of distinguished presence, admi-e manners, and irreproachable toilette, lately presented her-before a doctor in Paris, who had made monomania his ial study, to ask his advice about her son, who had for some past laboured under deplorable illusions. In his case the omania declared itself by a demand for diamonds and 00 francs on every occasion. "Where can I see this young madam?" said the worthy medico. "Here, in a few tes," replied the lady, and departed. Thence she repaired famous jeweller, where she ordered diamonds to the amount 000 francs, and asked that one of the shopmen might be ed to accompany her home, when her husband would pay ill. The name and address of the celebrated doctor lulled, erse, all suspicion of a meditated fraud. On re-entering octor's house the lady took the case of diamonds from the an, under the pretence of showing them to her husband, ho former in the anteroom, and entered the doctor's sanctum. e is my son, doctor; can he come in?" The doctor, happy prospect of an interesting case, opens the door, and, with ost amiable air, invites inside the dupe whom he is en-d to see and begs to be seated. The lady closes the door sentiments of delicacy, on the interesting consultation and ce "saves herself," *Anglicè* "bolts," with her precious spoil. while the doctor is engaged in the usual business with his t. "Sit down and talk," he says; "how old are you?" " replies the young man, "you are exceedingly kind; I am wenty-four; but as I do not see what that has to do with natter immediately before us, and I am in rather a hurry, ll you be good enough to give me a cheque for 30,000 francs t mo go?" "Ha, ha!" thought the sagacious doctor, s soon coming to the point. Well, my young friend, no the lady was very beautiful, and at the same time very vagant, and, in short, turned your head." "Sir!" said adignant shopman, "I do not understand the drift of your ions, which have nothing to do with my mission here. I t ill. Be good enough to explain yourself." The expla-a ensued, and the *tableau*. The story is so good that it to be true, but the *Figaro* (of Paris) is unhappily as in- us in its "absolutely historical" facts as the above-men- d lady. *Homœopathic World*.

MEDICAL EDUCATION IN OHIO.

contemporary the *Cincinnati Medical Advance*, not having ntroduced the word "Homœopathy" into its title, has onally been subscribed for by some allopath, whose only f "Medical Advance" consists in the discovery of a new , a fresh ointment, or some patent instrument designed to

make up for the want of specific remedies. But as homœopathy constitutes the greatest advance in the art of medicine during this or any preceding century, Dr. Wilson is perfectly justified in giving his journal the name he has done. One result of an allopath having thus inadvertently subscribed to the *Cincinnati Medical Advance* has been the following exhibition of the state of education among the allopaths of Ohio.—"Sept. 20 1877 Dr. Wilson Dear Sir I will be Down to See you next Month and I will Settle my indebted ness for your Journal I suppose from the title that it Meant what it Said MEDICAL ADVANCE but I was Sadly Disappointed the turm would or should imply the advancement of true Medical Science but I confess I have not been able to make any application of your theory & Practice to true Medical Science on Common Scence Consequently I have no use for your Journal as I can find Practically no science in it as the fundamental doctrin of Homœopathy never had any foundation in truth but originated in the Phantom of a fantas-tic Brain now Sir I have no Prejudice a gainst any of the Different Systims, only their errors if they Possess any truth I am willing to give Due Credit but I will not except a fallacy let it come from what Source it May and I am surprised that you will in this enlightened age of the world attempt to teach such a grand fallacy and Palm it off on the afflicted as science now Sir if you will next Spring open your journal for a fair Discussion of its fallacies I will agree to Blow it to the four winds of the heavens or burry it in the four shades of oblivion where it will never have another resurrection until gabrial trumpet Shall Sound to call all the errors of earth to judgement then there will be an awful quacking among the Dry Bones of the Doctors whose accountability will be great as it is their Duty to teach and Practice a system of Medicine on the people which will tend to Mitigate their Suffering and not to entail more lasting and severe troubles which will render them and their Posterity more liable to Disease and Premature Death now Sir if you are a true Phylantrophist I ask you to let your readers have a little light Permitting me to throw a ray of light in the region of Darkness therefore hoping to hear from you soon I remain yours truly—J. P.

P S Please discontinue the Journal or Perhaps you will take your Pay homœopathically if your Doctrin be true the the thou-sand or the ten thousandth Part of a scent would be greater than all if so Please Say So and oblige.—*Monthly Homœopathic Review*.

LONDON CHEMISTS' ASSISTANTS' ASSOCIATION CONVERSAZIONE.

THE readers of THE CHEMIST AND DRUGGIST little suspected, when they read the report of a meeting of some young men at 17 Bloomsbury Square for the inauguration of an Assistants' Association, that in a few months these pushing young fellows would be able to hold a *conversazione*, on one of the most inclement nights of the season, at which not only the great guns of pharmacy but more than 300 of the rank and file should be present; but such is the fact.

On the evening of February 27, which commenced with torrents of rain, 300 persons assembled at the Quebec Institute, Baker Street, W., thus testifying their belief that the chemists' assistants of London would be able to supply them with very substantial pleasures to counterbalance the substantial discomforts provided by the weather. Among those assembled were such burning and shining pharmaceutical lights as Professor Bentley, Messrs. T. H. Hills, W. Hills, Gale, Grant, Greenish, Hampson, Long, Martindale, Messrs. Plowman, Pope, Postaus, J. E. Stuart, and E. H. Woodroffe.

These were graced by the milder lights of ladies, who, though no less eminent in their own spheres, do not bring themselves so prominently before our special public. The entertainment provided for this illustrious gathering was evidently considered by that gathering to be worthy of it. We, of course are far too humble to express an opinion on so grave a subject, but from the looks and voices of the assembly we think that everyone was satisfied. The rooms—which we think everyone will admit were rather too small for so large a gathering—were lent by the Quebec Institute, and when we remember the difficulty of providing neon modulation in London we must consider the Assistants greatly indebted to it. Mr. Crouch, of the Ban-bican, had lent a number of beautiful microscopes and slides

Mr. Hume, of Lowestoft, lent some slides of authentic starches. J. Lloyd Bullock, Esq. (Bullock & Reynolds), lent some rare chemicals, amongst them being a specimen of lilacine said to be unique. It was of course regarded with all due reverence. The Stereoscopic Company provided lighter entertainment, in the form of a graphoscope and some splendid revolving stereoscopes. Messrs. Maw, Son & Thompson delighted the noisier spirits with some powerful batteries, which, by a wise arrangement, were placed in a room by themselves. Mr. Stuart lent several articulating and other telephones, as well as some valuable drawings and photographs. Specimens of Theine, Caffeine, and Guanine, of *Materia Medica* and of Terebene preparations were lent by Messrs. Hopkins & Williams, the Pharmaceutical Society, and Messrs. Cleaver respectively. The Royal Polytechnic provided some dissolving views, which were a great source of attraction. Dr. J. S. Stocker lent a beautiful model of the human ear. The centre table was adorned by a carboy of a new show-colour, lent by Messrs. Crawshaw & Co. We have left to the last, not because of its chronological occurrence, but of its acknowledged importance, that most essential part of an English gathering—the refreshments. These were dispensed at the commencement of the meeting by three friends of the assistants, Mrs. Barnes and Mrs. and Miss Stuart. To these ladies the grateful acknowledgements of all the visitors are due.

Still-life was not the only attraction provided. A capital programme of music, recitation, and song was carried out in a spirited manner. We cannot afford space to enumerate the performers. It must suffice to say that its particulars were varied, and were provided by ladies as well as gentlemen.

Pharmacy Abroad.

PHILADELPHIA.

DRUGS FOR THE PARIS EXHIBITION.

At a meeting of the Pharmaceutical Association, held on February 19, at the College of Pharmacy, there was displayed a collection of American drugs, which are to be placed on exhibition at the Paris Exposition, and will subsequently be presented to the Paris College of Pharmacy. The collection comprises nearly one hundred glass-covered cases, containing specimens of dried barks, roots, nuts, berries, &c. It is proposed by the Philadelphia College to make similar donations to colleges in various other countries of Europe.

PORT ELIZABETH.

A PHARMACEUTICAL VOLUNTEER.

By the last Cape mail we hear of the death of Mr. Duncan Cotman, a chemist's assistant, who had joined the volunteer force in the unhappy war in which the colony is now engaged. Mr. Cotman had been in the employment of Messrs. B. G. Lannon & Co., of Port Elizabeth, and was afterwards manager of their business at Graham's Town. He joined the Murraysburg volunteers, and went to the front for active service. He was killed by the explosion of an ammunition waggon. His comrades, it is said, much lament their loss.

NEW YORK.

THE AFFAIRS OF JOHN F. HENRY, CURRAN & Co.

A MEETING of the creditors of the above large wholesale firm, whose suspension we announced in our last, was held on February 12 at their store, 8 College Place, to hear the report of the committee appointed to investigate the accounts. In anticipation of trouble, the firm had two police officers, and one of the partners held guard at the door to admit only the creditors, whose names were taken as they entered. As soon as the meeting was called to order, the chairman, Mr. Coffin, made a few remarks, explaining why he had accepted his position, and then called for the report of the committee, which was read. The committee stated in the report that they had carefully looked into the condition of the assets and liabilities, examined the books, book-keepers, and members of the firm and certain creditors, to obtain all information possible. They find that

the firm started on October 1, 1873, with an ostensible capital of \$625,000, of which \$200,000 was contributed by John F. Henry and \$125,000 by C. A. Gillis, presumably from the assets of the old concern of John F. Henry, \$200,000 by Theodore Curran in trade marks, and \$100,000 by Henry E. Bowen, partly in cash and partly in Brooklyn Union stock; that it has gone on from that time without making \$1 of profit, but, on the contrary, has absorbed, in expenses and losses, the amount of the capital, and accumulated besides its present enormous load of liabilities. The committee place the assets and liabilities as follows:—

				<i>Liabilities.</i>			
				\$	c.	\$	c.
Direct—							
Bills payable	..	..	..	332,099	22		
Accounts	..	..	..	170,574	69		
						502,673	91
Contingent—							
Bills receivable, discounts, &c.	..	..	..	157,099	76		
Bills payable, firm paper held by Dunning	..	..	..	128,295	93		
Mortgages	..	..	..	6,000	00		
						291,395	69
Total liabilities						794,069	60
				<i>Assets.</i>			
				\$	c.	\$	c.
Stock merchandise	..	..	..	206,429	67		
Accounts receivable	..	..	..	127,565	39		
Real estate	..	..	..	12,000	00		
Furniture, fixtures, &c.	..	..	..	3,000	00		
Cash	..	..	..	791	21		
Stamps	..	..	..	464	20		
Bills receivable	..	..	..	225	16		
Total assets						350,485	63

The contingent liabilities are reduced by striking out Buchan's claim and others, regarded by the committee as too remote. The availability of the proprietary rights and trade marks assets depends on unsettled legal points, and the committee does not estimate their money value. The committee think that the firm's offer of 30 per cent. could only be paid by running the trade marks in the interests of the creditors, but by winding up the general business of the firm forthwith, and realising all that is possible from its assets, and by the sale and manufacture of the proprietary articles, the firm would be enabled to pay 37½ per centum, 10 cents cash, 5 cents in 6 months, 10 cents in 12 months, 5 cents in 18 months, and 10 cents in 24 months, due performance to be secured by an assignment in trust of the trade marks, the proprietary rights, and recipes.

Mr. D. C. Robbins moved the acceptance of the report, and spoke against its adoption, criticising the firm in very severe terms. He said that by the report of the committee it appeared that the firm had so mismanaged the business and made so untruthful representations through the press and mercantile agencies, thereby causing great misery and many failures, that it should be restrained entirely from further transaction of business. He believed that the interests of the trade demanded that the concern should be placed in liquidation in bankruptcy and a trustee, together with a committee of creditors, be appointed to wind up its affairs.

Mr. Henry replied to what he called the personal allusions of Mr. Robbins, and the vote was taken on the report of the committee. The report was adopted by a vote of 41 to 21. Mr. Robbins again addressed the meeting, explaining some statements, and after motions to adjourn had been defeated, J. Saunders, attorney for the firm, explained the reason for the firm going into bankruptcy, which was to prevent the execution of judgments, and the inability of the assignee to file such large amount of bonds, viz., \$500,000, which were required. The firm, he said, would make the same offer in bankruptcy proceedings as the committee had recommended, which would require all the labour, skill, and numerous business connections and trade marks for the next two years, and asked the creditors to accept a number of recommendations to the effect that the firm be permitted to carry on business by accepting the terms offered. The meeting then adjourned.

DOVER'S POWDERS—A SUGGESTION.—A contemporary suggests the substitution of bromide of potassium for the sulphate of potash in the manufacture of Dover's powders. This combination, he says, has the double virtues of opium and bromide of potassium, and lessens the disagreeable effects of the opium. The bromide serves all the mechanical purposes of the sulphate of potash.

Scientific Notes from Foreign Sources.

SULPHOCYANIDES IN THE URINE.

SULPHOCYANIDES have long been known to exist in the saliva, and works on medical jurisprudence analysts are warned to distinguish between it and meconic acid. Gscheidlew and others have recently, but quite independently, proved that these are also present in urine. In the human urine 0.0225 of sulphocyanic acid in the form of sodium salt are in 1,000 cubic centimetres.

SOPHORA SPECIOSA.

At the meeting of the American Pharmaceutical Society, Mr. Bullock described the seeds of this plant. A quantity had been sent from San Antonio, Texas. They are somewhat irregular in shape, with a general disposition to an oval form, the large ones having a longitudinal diameter of $\frac{60}{100}$ of an inch, and a transverse diameter of $\frac{45}{100}$; their colour varies from pale to dark red, the seeds are horny, from $\frac{3}{100}$ to $\frac{5}{100}$ of an inch in thickness, the interior is white oily kernel, having a slightly bitter taste. The seed does not impart its colouring matter to dilute but not to strong alcohol; it has not yet been determined in what part the medicinal property of the bean resides, but the probability is that it is in the seed. The seeds are contained in the pod of yellowish colour varying from 1 to 2 $\frac{3}{4}$ inches in length, and containing from one to five seeds. Professor Wood, jun., has detected in them an apparently new alkaloid, for which he proposes the name of *Sophoria*. Half one of the seeds is said to be sufficient to produce delicious exhilaration, followed by a refreshing sleep lasting one or two days. It is said that a whole seed will kill a man.

THE INSECT POWDER OF RAGUSE.

Insecticide Ragusais (Poudre Insecticide de Raguse).

The insect powder of Raguse is the produce of *Chrysanthemum indicum* and not of the Persian *Pyrethrum Carneum*, according to the *Journal Officiel de la République Française*, which takes information from a circular issued in November, 1877, by the Chamber of Commerce of Raguse. In 1876, powder to the value of 70,000f. was exported from the ports of Raguse and Trieste alone. The greater part is warehoused at Trieste, but it is sophisticated by mixing together the powder of the field *marguerite des champs*. So adulterated, the powder, in its natural state is superior to the Persian product is attacked and destroyed by insects. Two varieties of the powder are distinguished in local commerce, viz: first, the unopened flowers (*à fleur fermée*) is gathered on the plants before the flowers are fully open and while its properties are most active; the second with expanded flowers (*ouverte*) is collected in the valleys later in the season when the plant has reached maturity. To guard against the falsification of the drug by the brokers of Trieste, the Raguse Chamber of Commerce recommends merchants to purchase the powder unpowdered, and have them reduced under their own supervision.

SALICYLIC vs. BENZOIC ACID.

V. MATTISON read a paper before the Alumni Association of the Philadelphia College of Pharmacy on January 3, 1878, in which were detailed some comparative experiments for the purpose of determining the relative values as antiseptics of salicylic and benzoic acids and calcium bisulphite. The paper is printed in the *American Journal of Pharmacy* for February. Infusion of malt was chosen as the medium, and was mixed with varying proportions of the substances mentioned. At the end of forty-eight hours the infusion containing salicylic acid and calcium bisulphite was found to be thoroughly sour, and the fungoid life was in full activity. The samples containing benzoic acid were found to be slightly sour, but they contained few or no signs of fungoid life. Twenty-four hours later the benzoic acid samples were rather more sour, but the difference between them and the other sets was more marked than before. At the meeting Dr. Millor stated that benzoic acid was not found among the brewers, who use it to a great

GENOTHERA BIENNIS.

This plant, well known as the Evening Primrose, Tree Primrose, and Night Primrose in cottage gardens in England, seems to be a native of North America. It is found there growing in hedgerows from Canada to Carolina. Some botanists consider it to be naturalised as a British wild plant, but Loudon says that it was introduced from North America in 1629. The name is derived, according to Loudon, from the Greek *oinos*, wine, and *therō*, to hunt, for the reason that the roots of this plant eaten after meals are, like olives, incentives to wine-drinking. Others derive it from the supposed vinous smell of the root. The plant is said by Decandolle to be cultivated for the sake of its roots, which are sweet and are eaten in some countries as a spring salad. Schoepf states that it is esteemed as a vulnerary. Its medicinal properties seem to be attracting considerable attention among American practitioners. Dr. G. B. Wood states in the "United States Dispensatory" that the late Dr. R. E. Griffiths found it valuable in many diseases which show themselves by eruption. He used a decoction of the small branches, leaves, and the bark of the stem and larger branches, and applied this as a lotion to the affected part several times a day. He found it more useful in tetanus than in any other disease. He considered its virtues to reside in the mucilage of the cortical layers, which leaves a slight sensation of acrimony on the fancies.

Early in 1877 Dr. R. N. S. Davies wrote to the "American Practitioner" stating that he had found it "a mild but efficient sedative to nervous sensibility, acting more especially on the pneumogastric nerve." He recommended it for further trial in whooping cough, spasmodic asthma, and certain sensitive conditions of the stomach interfering with healthy digestion. More lately, Dr. J. F. Sullivan, of Western America, states that eight years' experience has taught him also to regard it as a mild sedative with the additional property of being an alterative in many diseased conditions of the mucous surfaces. He has found it useful in many cases of dyspepsia, accompanied by an irritable state of the stomach and bladder, but believes its "chief value will be found in typhoid fever, to the treatment of which it is peculiarly adapted by its soothing action upon the intestinal mucous surface." Both the authorities above mentioned give directions as to the dose of the infusion, extract, or fluid extract, but with equal unanimity they neglect to state the strength of the preparations they used. Their directions are, therefore, obviously useless.

SOLUBILITY OF SULPHUR IN ACETIC ACID.

LIEBERMANN finds that sulphur is soluble to no inconsiderable degree in warm concentrated acetic acid, and that a trace is taken up even by the dilute acid. If the concentrated solution be diluted with water much of the sulphur separates as milk of sulphur; if it be evaporated with the Sprengel pump into long prisms of sulphur separate; when cooled, moreover, the liquid deposits sulphur in a crystalline form. All modifications of the element appear to be taken up by acetic acid. The author refers to analytical methods where these changes occur, and are apt to mislead the operator.

PLANS OF PERSPIRATION.—*Le Progrès Médical*, as quoted in the *Scientific American*, publishes a communication from M. Aubert which describes a plan by which the distribution and activity of the sweat glands of the skin may be approximately mapped out. The method is as follows:—A piece of white paper is applied to the skin, and maintained in contact a few minutes. The sweat, as it issues from the follicles, slightly moistens the paper at points corresponding to their orifices. A dilute solution of nitrate of silver is then brushed over the paper, and the nitrate becomes converted into a chloride from the chloride of sodium in the perspiration. The chloride of silver blackens upon exposure to light, in this way mapping out the distribution, &c., of the sweat glands. With the aid of this test paper M. Aubert has studied the secretions in nevus, ichthyosis, pelade, erysipelas, scabies, lupus, furuncles, herpes, psoriasis, &c., and finds that, as a rule, irritations of the skin completely suppress the perspiratory secretion, and that even when the irritation ceases some time elapses before the secretion reappears. In cicatrices many of the glands disappear, but those which remain secrete more profusely than before.



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Reduction in Prices } See pages 28, 29.
Judgment on Appeal }

EDITORIAL NOTES.

APOTHECARIES' AND OTHER WEIGHTS.

THE Weights and Measures Bill prepared by the Board of Trade, and now before a Select Committee of the House of Commons, is a much-needed consolidation of the many Acts and parts of Acts in the British code which relate to weights and measures. It proposes to repeal, and practically to re-enact, one, the whole or sections of twenty-two Acts from the Magna Charta downwards. The majority of the provisions of the Bill do not greatly concern chemists and druggists generally, but unnecessary confusion has been occasioned by what seems to be the insufficiently-considered opposition which the Pharmaceutical Council has seen fit to offer to the desire of the Board of Trade to abolish the apothecaries' weight. The Pharmaceutical Council, as we all know, is always eager to do battle for the rights and privileges of those whom it represents. All honour to it for this tendency. But its combative disposition might at least be kept in reasonable check, and we fail to see any good reason for holding to a system which chemists could abandon, if they think, without the slightest inconvenience. The grain, as 1-7000th part of an avoirdupois pound, is now a recognised weight. The troy ounce of 480 grains, which is the same as the apothecaries' ʒ, is to be retained. What more is needed? Quinine and some other medicines, it is said, are sometimes asked for by the drachm or scruple. Surely they could be sold in the 60 or 20 grains. The absurdity of having among our weights two quite different drachms, one being the 16th part

birdupois ounce and the other rather more than that value, is not worth perpetuating. The signs \mathfrak{D} might be legalised to represent 20 and 60 grains respectively, and thus, as we conceive, all inconvenience be obviated. The Bill, as it now stands, however, is indistinct on this point. The preliminary memorandum says that, "By 5 and 6 Will. IV. c. 63, s. 10, articles sold by weight were required to be sold by avoirdupois weight, except gold, silver, and precious stones, under 16 and 17 Vict. c. 29, s. 1, are to be sold by the ounce, or by multiples or decimal parts of that ounce, and drugs, which, when sold by retail, may be sold by apothecaries' weight; a weight with respect to which no enactment exists." Clause 20 of the proposed Bill requires that all sold by weight shall be sold by avoirdupois weight, (a) gold, silver, platinum, precious stones, &c., which sold by troy weight, and (b) drugs, by retail, which may be sold by apothecaries' weight. They may also, we presume, be sold by avoirdupois weight, so that if we go to a shop and ask for an ounce of diamonds the jeweller may legally give us 437½ or 480 grains, as he may think best. Then clause 24 "Every person who uses or has in his possession for use a weight or measure which is not of the denomination of the Board of Trade standard shall be liable to a fine not exceeding five pounds, or in the case of a second offence ten pounds, and the weight or measure shall be liable to be forfeited." In a schedule the list of the Board of Trade standards is given, and this includes a large variety of weights, from the weight of a grain upwards. But there are two weights which are invariably in chemists' scale boxes—the 6 grain and the 60 grain—which are not included, and which would, if not included, be illegal, unless the vague wording of the Bill in favour of apothecaries' weight should suffice to cover the possessor. The vested rights, however, of all weights duly verified and stamped, now in existence, are not affected. Among the measures of capacity, after naming them the quarter-gill, the line "measures for sale of drugs" is added. This, we presume, permits the use of our graduated measures, and implies that the Board of Trade does not quite object to them and does not mean to study the subject. Regarding the modifications which this Bill proposes, the recognition of material weights above 56 lbs. until a new standard is legalised; the recognition of a chain as a measure of length; the abandonment of the troy pound and the troy penny; the correction of the diameter of a bushel. Some few measures are cleared up; for instance, as to the person liable for the fraud, the person committing or privy to the fraud, instead of the person "using or having possession" of the measure, &c., is made liable. The author of the Bill also says that the ambiguity as to whether it is penal to use a weight which is too heavy is removed by the omission of the word "unjust" before "unjust." The sentence formerly ran, "any weight which is false, light, or unjust." We are dense enough not to see how the omission of the word "light" removes whatever ambiguity there may have been. The Bill is needed, however, as we have said, and no doubt the Committee to which it has been referred will see to the defects which a first draft must of necessity contain.

THYMOL.

Essential oils of thyme, of American horsemint, and of *ho is ajowan* contain a substance, a homologue of carbolic acid, having the composition represented by $C_{10}H_{14}O$ and known as thymol. For more than two years this has been used by German surgeons, and is now being introduced among ourselves. It was discovered in 1719 by Caspar Wiedemann, examined chemically by Lallemant and Leonard

Doveri, and first used to deodorise unhealthy wounds by Bouillon and Paquet, of Lille, in 1868. In 1875 several German surgeons published investigations of its antiseptic properties, which are estimated to be from 4 to 25 times as powerful under certain circumstances as those of carbolic acid. Thymol is a crystalline, nearly colourless body, with a pleasant odour and an aromatic burning taste. Its specific gravity is 1.028, and it melts at 44° C. It dissolves in 1,200 parts of cold water, 1 part of rectified spirit, 120 parts glycerine, and in ½ part of caustic alkalies. Fats and oils also dissolve it readily. It is prepared from the oils of either of the plants before mentioned, but pharmacists should beware of experimenting on English samples of oil of thyme, as but few of them are genuine, or, at least, contain any thymol. The oil is said to yield as much as 50 per cent. of thymol on the Continent. Thymol can be manufactured from these oils by treating them with an equal volume of a 20 per cent. solution of caustic soda, separating the alkaline liquid, and neutralising with hydrochloric acid, when the thymol will float to the surface. It may also be obtained by submitting the oils to a low temperature for a few days, when the thymol crystallises out. Its powerful antiseptic action, exceeding under some conditions that of carbolic acid, its small activity as a poison—about one-tenth of that of carbolic acid—and the absence of irritating effect when it is applied to the skin, all point to its use as a substitute for carbolic acid in the now well-known antiseptic treatment of surgical cases elaborated by Professor Lister. This substitution has been made with great success by Professor Volkmann, of Halle. For the spray solution, this gentleman uses a mixture of 1 part thymol, 10 alcohol, 20 glycerine, 1,000 water; but we understand that a solution in water only, which will not deposit, may be made by adding 1 part of thymol to 1,000 of hot water. For the gauze dressings used by Professor Lister, others were substituted, made by saturating 1,000 parts of bleached gauze with a mixture of 500 parts spermaceti, 50 resin, and 16 of thymol. This prepared gauze is extremely soft and pliant, and, to use the words of the reporter, sucks up blood and the secretions of the wound like a sponge. The fibres of the gauze being impregnated with spermaceti, cannot, of course, become saturated with the secretions, so that they do not become stiff. Thymol has been used for various skin diseases by Dr. R. Crocker, but the results of his experiments have not yet been published. As an internal remedy, thymol does not seem to make much way. It has proved useful in diseases of the stomach accompanied by fermentation, and Mr. W. H. Stone reports in the *Medical Times and Gazette* that he has found it useful in cases of chorea, one form of which is St. Vitus' Dance. The present cost of thymol is about five times that of the best carbolic acid, but as one part of the former seems to do as much work as 25 parts of the latter, the advantage of price is on the side of thymol.

THE GERMAN ADULTERATION BILL.

The German chemists are following the tactics which were so successfully played in this country some ten years ago in order to rouse up the public terror to a pitch high enough to ensure the necessity of the public analyst. The press, ever eager for anything startling, is helping forward the movement with all its might. Its columns have been filled with the most alarming discoveries. Sausages from Leipzig were found full of trichinae; lead in snuff; fuchsin in wine; browned flour in pure cocoa; anything rather than malt and hops in the lager beer—these are among the reports gathered from recent German newspapers, and all winding up with the same little moral about the importance of legislative protection. An apothecary has lately discovered that Schiller's study was papered with an arsenical paper, and the Teutons are busy calculating how many noble

tragedies they have lost through that accursed paper. We might suggest the possibility of those that the poet wrote being due to the poison. Perhaps the touching story of "Thekla" would never have been conceived if Schiller had not been suffering from a mild form of arsenic poisoning. Anyway, wall papers, wearing apparel, toys, and the like are to be included in the new Bill, the scheme of which has been prepared by a committee presided over by Dr. Friedberg, the President of the Department of Justice. Bismark is said to be much interested in the subject, and there seems a general disposition to get a stiff Bill through the Reichstag.

TRADE WITH AMERICA.

THE Financial Committee of the United States Legislature has drawn up a Bill which, if passed, cannot fail to make a considerable difference to our trade with the North American continent. We are not in much position at present to judge of the prospects of this Bill, but the collateral indications are certainly in its favour. The same section of politicians which has triumphantly carried Mr. Bland's Silver Bill, which legalises the payment of all debts, public and private, in silver instead of gold, or, in plain language, makes 90 cents a legal settlement of a 100 cents claim; that party, we say, is pretty much the same as will support this Tariff Bill. The manufacturers of the Eastern States, with interests to protect and with Conservative notions firmly rooted in their hearts, are its opponents; but if they are to be pitted against the great expanding West and South, the look-out is not hopeful, at least for them. The new Bill, if carried, would be a great step towards free trade. It proposes to reduce the number of dutiable articles from above 2,000 to about 500, and it reduces the import dues to the extent of about 20 per cent. all round of those that remain. An increased duty is to be imposed on opium, the present rate being \$1 per lb., and the proposed tariff fixing \$2, and \$6 to \$8 per lb. for opium prepared for smoking. A number of chemicals on which a duty is now levied will be free. Drugs are in most cases reduced, and some now charged will be free. We shall give fuller particulars when the Bill passes, if that consummation should be reached; meanwhile we may mention that a copy of it as proposed may be obtained by anyone interested, free, from the publisher of the *European Mail*, 44A Cannon Street, E.C.

LIBERAL HOMŒOPATHY.

DR. DRYSDALE has recently directed the attention of homœopaths to the decline of homœopathic practitioners in England. In 1843 it appears there were 20 such practitioners; in 1853 there were 179; now there are 280. If the arithmetical progression of the decade from 1843 to 1853 had been maintained, there would have been in this country in 1873 no less than 14,499 homœopathic practitioners, and nine times that number by 1883. A notion of this sort does not seem to sceptical outsiders worthy of much discussion, but Dr. Bayes, of London, one of the most ardent and accomplished advocates of the great truth, takes it up seriously. In a paper read by him before the British Homœopathic Society last month he discussed the position and prospects of homœopathy with much cogency. His theory is that the great advance made in the decade of 1843-53 was due very largely to the literary activity which prevailed among the apostles of the school. Since that date homœopaths have found their private practice so engrossing that they have been comparatively quiet in the promulgation of their system. But this comfortable explanation is not satisfactory to Dr. Bayes. Evidently he will not be contented till this country is literally overrun with professors and practitioners of that "noble science which more than any other brings material blessings to the public, of the greatest method of healing

that has ever been handed down to mankind." Dr. Bayes sees that the ostracism, the persecution, the material disadvantages to which students of homœopathy are subjected must largely tend to check the influx of such into the profession, and in his paper he argued gallantly and with refreshing liberalism for free trade in medicine. America began about the same time as England to study homœopathy, and has now 6,000 homœopathic practitioners. "If we are to," said Dr. Bayes, "we shall found a school of our own, educate men in our own views, give them licenses and diplomas. First, men may laugh at us, may even persecute us, but we shall get pupils. If we educate men well, if we give them a better method of healing, we shall not fail to increase in numbers in strength as the years roll on. If we do this we shall soon be in a position to claim a charter. We are in an exceptional position, and a charter would certainly be granted us. We should patients who believe in homœopathy be debarred from having properly instructed homœopathic physicians and surgeons provided for their needs? The existing schools won't provide them. We, therefore, ought to provide them." The curricula of the system, with its four years of attendance at lectures, and its cost, or 500*l.* cost, Dr. Bayes also opposed; not that he objected to lectures and schools, but because he thought a student should be allowed to get his knowledge as best he could. "Up to down England you will find many homœopathic chemists visiting patients and studying medicine to the best of their ability, and I give them my cordial sympathy and praise. They have no right to relegate patients back to the tender mercies of allopathy because there is no homœopathic legally recognised practitioner within ten, twenty, or forty miles of them. They ought to rejoice that men of natural genius and of energy willing to devote their time and talents to affording the help they can, acting the part of the Good Samaritan." As to that Dr. Bayes' chance of election to the Presidency of the Medical Defence Association is surely infinitesimal.

PAWPAW—A POSSIBLE SPECIALITY.

MOST persons in the course of their lives have encountered the miseries of a tough steak, an old hen, or of fresh-slain meat. Some at least on such occasions have sighed for the magic paw-paw tree. This tree is abundant in tropical America, and travellers in that district have failed to mention it. Charles Kingsley, in "At Last," says that each house has a tree planted near it, so that the inmates may avail themselves of wonderful properties to which we wish to call attention. London, in his "Encyclopædia of Plants," says, "The paw-paw is generally said to have the property of intensifying and softening fibre by suspension under its leaves or branches." Sir J. Hooker, in "Decaisne and Le Maout General System of Botany," says, "The whole tree has the singular property of rendering tough meat tender by separating the muscular fibres." Lindley, in his "Natural System," says, "The paw-paw has, moreover, the singular property of rendering the toughest animal substances tender by causing a separation of muscular fibre; its very vapour even does this; newly-killed meat suspended among the leaves, and even old hogs and poultry becoming tender in a few hours when fed on the leaves and fruit." He refers us to "an excellent account of the paw-paw by Dr. Hooker in the *Botanical Magazine*, 2898."

Whether any preparation of the leaves will retain the above properties, or whether the leaves may be dried with deterioration we do not know. But there is no doubt that a preparation which really embodied these virtues would be very popular, and that it would soon become one of the necessities of life without which no careful housekeeper would allow her kitchen to be left. All that we can do is to advise some energetic member of our fraternity to procure a quantity of the leaves

from the West Indies, and to try to obtain a suitable ration therefrom. As we have before said the tree is scant, and the expenses of collection would therefore be small. The leaves might be packed fresh in casks, which should then be filled up with salt water (not sea water), and so imported. Or the juice might be expressed from the leaves and saturated with salt or preserved with benzoic or citric acid and sent over in any convenient vessels. Experience would prove if they would retain their properties when dried, and would clear up all the points we are compelled to leave unsettled.

WHAT IS A LOZENGE?

CHARNOCK, in *Notes and Queries* for March 2, investigates the meaning and origin of the word "lozenge." In English it means (1) a figure with four equal sides, having two acute and two obtuse angles—a rhomb; (2) a small cake of sugar, &c., medicated, originally in the form of a lozenge or rhomb, usually round. In mediæval Latin *lozengina lozengia* is a ring of a shield; in French, *losange* besides meaning a rhomb is also a term of heraldry, and in music is equivalent to *breve*. In old French it meant flattery, a rhomb, any-thing of the form of a rhomb, and "a little square cake of dried herbs, flowers," &c. Gachet derives it from the old French *losange*, a modification of *louange*, flattery, saying that formerly the arms of families were displayed on rhombs; these were designed to increase the consideration of their rank, and hence have been called *louanges*, which name might have been applied to the rhombs themselves. Bescherelle says, *losange*, from the Low Latin *laurengia*, made of laurus or bay-leaves, because the leaves of the bay-laurel are rhomb-like; or, according to others, from the Greek *loxos*, oblique, because the sides of the rhomb are all oblique. In modern French the word is *pastille*, and when not circular *tablette*. Mr. Charnock would derive "lozenge" from the Arabic *lauzinaj*, a confection of almonds, from *lauz*, an almond tree (modern Arabic *lūz*, the almond tree); and he supports this derivation with a number of words in Turkish, Syriac, Persian, Italian, and Arabian. The suggested derivations are at times numerous enough to choose from.



AND

Literary Notes.

Cyclopædia of Practical Receipts and Collateral Information in the Arts, Manufactures, Professions, and Trades, Including Medicine, Pharmacy, and Domestic Economy; Edited as a Comprehensive Supplement to the Pharmacopœia, and General Book of Reference for the Manufacturer, Tradesman, Amateur, and Heads of Families. Sixth Edition, Revised and partly re-written by Richard V. Tuson, M.I.C., F.R.S., London and Berlin, Professor of Chemistry and Toxicology in the Royal Veterinary College; formerly Lecturer on Chemistry at the Charing Cross Hospital. London: J. & A. Churchill, 1878.

By the Reverend John Wesley, under the pseudonym of John Wesley, of Good English and Common Sense, published a Dictionary. On the title-page he said, "N.B. The Author says you he thinks this the best English Dictionary in the world." If they who are responsible for the elaborate title of this work before us had but added to it some such sentiment, it would presumably have anticipated all the reviewer would say. As, however, our knowledge does not extend to the nature of Otaheitian, Kamschatkan, and many other languages, we feel too modest to make such a sweeping assertion. "Cooley's Cyclopædia is the best of the kind in the

world." Its first edition, however, must have been published in some pre-historic period. It is not to be found either in the library of the Pharmaceutical Society or in the more pretentious collection at the British Museum. The second is dated 1845. The subsequent editions have appeared at progressively decreasing intervals, which shows that the work is rising in the esteem of those for whom it is designed. The present edition is considerably enlarged, and a new feature is introduced in the mode of its publication. It is to be published in fifteen monthly parts of 112 pages at 2s. 6d. each. Certain terribly provident people object to purchasing works in parts, saying that they always cost more in the end. For our own part we have always thought it as wise to put off our dinners for a month and to eat the whole thirty-one on the last day with a view to saving the time consumed in sitting down and getting up from the table on the thirty previous days. Very many are so constituted that the payment of fifteen half-crowns and something for the binding is a much easier thing than to pay 35s. for a bound copy. The 112 pages of the first part, which appeared on March 1, are equivalent to the first 80 pages of the previous edition. The additions are decidedly useful, and the very few omissions are wisely chosen. There is a chapter on accidents, detailing ready modes of treatment in most of the casualties we are exposed to. Adulteration has more than two pages devoted to it, and articles on legislation on subjects connected with pharmacy are also for the first time introduced. But we cannot spare space to enumerate all the improvements. Those who have the old edition of this work will do well to supply themselves with its successor; those who have no copy of it will do still better if they purchase this edition.

We have received another new pharmaceutical periodical from America. This one is entitled "The Philadelphia Druggist and Chemist." That our own title has not been appropriated in its exact form is a mark of favour for which we are duly thankful. There are some useful and pithy articles in this publication, and it is very neatly produced. Scattered up and down its pages, too, we are pleased to recognise a few of the products of our own genius, some of them standing boldly forward as native-born Americans.

AN admirable addition has been made to the literature of science bearing directly on medicine and indirectly on pharmacy, by Professor Lionel Beale. He has issued an entirely new edition of "How to Work with the Microscope," a work which, on its first publication, put him in the front rank of teachers and investigators. The writer of the volume had the rare good fortune of being associated, just at the completion of his career as a student, with Professor Bowman, in the chair of Physiology at King's College. He was thus led to continue in a path of study to which he was by nature devoted, and had his attention directed to the best mode of practically illustrating the course. The microscope was obviously one, if not the chief, guide in all physiological inquiry. From the date of his opening lecture to the present time, Dr. Beale has shown a patience in collecting facts, and an industry in devising mechanical applications which might well be copied by others who can never hope to share his wonderful clearness of explanation. The reader of this work will find whatever information he may desire respecting microscopical work, from the choice of an instrument to its management, together with such further illustrations and details as are of interest to the microscopist.

NEW BOOKS.

Action of Medicine, Illustrated. By I. Ott. 8vo. (Philadelphia) London	10/6
Anatomy and Physiology, Syllabus of Lectures in, for Students of the State Normal and Training School at Centland, Mo. By T. B. Stowell. 8vo., sewed. (New York) London	2/6
Botany, Outlines of Morphology and Physiology. By W. McNab. 18mo., pp. 162. (London Science Class Books). Longmans	1/6
Cerebral Hyperæmia: the Result of Mental Strain or Emotional Disturbance. By W. A. Hammond. 16mo. (New York) London	5/
Diseases of the Nasal Cavity and the Vault of the Pharynx. By C. Michel. From the German. With an Introduction by E. L. Shurley and C. C. Yemans. 8vo. (New York) London	4/
Heart and its Troubles: being an Epitome of the Functional and Structural Diseases of the Heart, and their Hygienic and Homœopathic Treatment. By G. Lade. Post 8vo., pp. 134. Homœopathic Publishing Company	3 6
Human Anatomy, Atlas of. By Boeck. Coloured Plates. 4to. Reinshaw	63/

- Law of Patents, Trade Marks, and Copyrights. With Notes under each Section of the Law referring to the Decisions of the Courts and the Commissioner of Patents, together with the Rules of Practice in the U. S. Patent Office, and a large collection of Forms. By O. F. Bump. 8vo., sheep. (New York) London .. 30/
- Mother's Golden Guide to Rearing Healthy Children. With valuable Hints for the Young and Old. Approved by the Medical Authorities of the National Health Society. With an Introduction by Arthur W. Edis. 12mo., pp. 150. Bacon. Sewed 1s. .. 2/
- Nursing, Manual of. By V. White. Prepared under the direction of the New York Training School for Nurses. Revised by Mary Putnam Jacobi, M.D. 16mo. (New York) London .. 6/
- Pathological Anatomy, Compendium of Diagnosis in. By J. Orth. Translated by G. H. Sahine and F. C. Shattuck. Revised by R. H. Fitz. 8vo. (New York) London .. 18/
- Spinal Disease and Spinal Curvature: their Treatment by Suspension and the Use of the Plaster-of-Paris Bandage. By L. A. Sayre. Illustrated with Photographs from Nature. 12mo. (Philadelphia) London .. 21/
- Telephone and Phonograph, All about the. Containing Description of Bell's and Dolbeare's Telephones and Edison's Phonograph; History of the Discovery, Details of Construction, and interesting Experiments. 12mo. pp. 98, boards. Ward & Lock .. 1/
- Telephone: its History, Construction, Principles, and Uses; with definite Instructions on the Making of Telephones, by which failure is impossible, and to which is added a Chapter on the Phonograph. By S. Garner. 12mo. (Brighton: Garner). pp. 32, sewed. Simpkin .. 1/
- Temperance Lesson Book: a Series of Short Lessons on Alcohol and its Action on the Body. Designed for Reading in Schools and Families. By B. W. Richardson. 12mo., pp. 280. Tweedie .. 1/
- Wounds, on the Treatment of: Clinical Lectures. By S. Gamgee. With Engravings on Wood. Square 16mo., pp. 160. Churchill.. 5/

MEDICAL GLEANINGS.

RATIO OF PHYSICIANS TO POPULATION.—Dr. William Pepper, of Philadelphia, tells us in a recently published pamphlet that in the United States, with a population of 44,874,814, there are 62,383 doctors, being 1 doctor to every 600 persons. In France the population is 36,100,000; the physicians 19,902, being 1 doctor to every 1,814 persons. Great Britain, with a population of 32,412,010, has 19,385 doctors, or 1 physician to every 1,672 persons. In the German Empire there are 13,686 doctors for a population of 41,060,695—1 doctor to every 3,000. Austro-Hungarian Empire, population 35,904,435, and 14,361 doctors, being 1 physician to every 2,500 persons.

ANIMAL ODOURS.—Dr. Wm. A. Hammond, an American physician, has noted that in certain conditions and affections of the nervous system certain peculiar odours are emanated. Thus he tells of a young married lady, of hysterical tendencies, who, during her paroxysms, exhaled an odour of violets, which must have in some measure reconciled her husband to these unpleasant domestic occurrences. Another lady, the doctor reports on strong testimony, "during the venereal excitement, gives off a very decided roseaceous odour." But the peculiarity is not always thus charming. A young lady, a school-teacher, subject to sick headaches, evolves at these periods, *horribile dictu*, "an odour similar to that of Limburger cheese."

AN ARTIFICIAL GULLET.—Dr. F. Trendelenburg reports in the *Wiener Med. Presse* the following successful case of gastrostomy. A boy, aged seven years, the subject of impassable stricture of the oesophagus from swallowing caustic potash, had become extremely emaciated. Gastrostomy was performed without bad effects, and two days afterwards nourishment could be introduced into the stomach through the small resulting gastric fistula. A small drainage-tube of the thickness of the little finger was introduced into the fistula, into which was passed a thicker glass tube, having attached to it an elastic gum catheter reaching to the mouth. When the boy wants to eat he chews his food and expels the masticated mass through the tube into the stomach. Four months after the operation the boy's weight had increased by a fourth.

EPILEPSY IN THE DOG.—Nearly everyone has sufficient liking for dogs to feel interested when their diseases seem to ape those of men. Dr. Maenaughton Jones describes, in the *Medical Examiner* for February 28, the sad fate of a splendid black Newfoundland dog. When about eighteen months old while accompanying the carriage, after a few premonitory symptoms he suddenly fell on the roadside in convulsions, frothing at the mouth. In a little while he recovered and was taken into the carriage, but before reaching home he jumped out of the window, rushed in at the first open door, and had another fit. From this time forward he was subject to fits, and when possible rushed in at open doors on the approach of attack.

DISTILLED SEA-WATER.—A Parisian merchant and a doctor whose ingenuity is recorded in more than one of our contemporaries have "invented" a number of articles such as bread-biscuits, dry cakes of all kinds, liqueurs, &c., all prepared with sea-water, which preparations are endowed with such marvellous healing powers that the elixir of life is put in the shade. Sea-water, they have discovered, is the one remedy for all possible diseases, and they state in their prospectus that the use of the preparations renders all other medical treatment unnecessary. To make sure of obtaining its "virtues" in a pure and concentrated condition they only use "distilled" sea-water.

HOMOEOPATHIC LIBERALISM.—At a meeting of the Homoeopathic Medicine Society of the State of New York at Albany the other day a resolution was adopted, declaring "That although firmly believing the principle *similia similibus curantur* to constitute the best general guide in the selection of remedies and fully intending to carry out the principle to the best of ability, this belief does not debar us from recognising and making use of the result of any experience; and we shall exert and defend the inviolable right of every educated physician to make practical use of any established principle in medicine, or of any therapeutical facts founded on experience, and verified by experience, so far as in his individual judgment they shall tend to promote the welfare of those under his professional care."

PARAFFIN SPLINTS.—Dr. MacCawen, we learn from the *British Medical Journal*, is now recommending paraffin splints in preference to all others. At first, after applying the bandages brushed melted paraffin over them; but the process he recommended was to roll the bandages in melted paraffin, when required to soften them in hot water, a little melted paraffin being brushed over them when extra strength is required. Paraffin is found in the market which melts at various temperatures, from 113½° F. to 130° F. That melted at the lower temperature is preferred. The advantages of the splint are that it sets quickly, retains its form well, and shall discharge cleanly away from the surface. It is light, cheap, costing about ninepence, and when no longer wanted paraffin can be re-melted and used again. The disadvantage is that it is liable to soften, and so cease to give support, which brought near a fire or any other source of heat.

The following circular, it seems, has been distributed pretty liberally among the metropolitan doctors. Some of them are indignant about it, and write to the medical journals to say

"Funeral Establishment"

"DEAR SIR,—In returning the profession my sincere thanks for the patronage and recommendations which I have received from them for the last ten years, I beg respectfully to intimate that, owing to my increasing business, in future instead of remitting cheques half-yearly hitherto, they will now be sent regularly every quarter.

"Furthermore, in reference to silk handbands, &c., I have made arrangements when they are returned in future to allow the full value of them to place the same to the credit of the account.

"I would also here advise, when favouring me with your recommendations, that you will as soon after as possible send me your card with the name of deceased, so that there may be no mistake made in crediting you with the same. I also deem it necessary in recommending or sending servants, that you will warn them against making any mistake in the name and address, as there is another establishment within a few doors of me with which I have no connection whatever.

"I beg to remain, dear Sir,

"Yours respectfully,

FUND for the quinquennial award of a prize for the best original English work during the past five years in anatomical, physiological, or pathological research was founded in 1872 in memory of Dr. Marshall Hall. The first award has just been made to Dr. Hughlings Jackson for his researches on aphasia, epilepsy, and the use of the ophthalmoscope in nervous affections. The prize amounted to over 80*l.*, being the simple interest of the fund for the past five years.

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IODIDE OF ETHYL IN ASTHMA.—The *Medical Press and Circular* tells us that Professor Germain See, of Paris, is now recommending iodide of ethyl in cases of which difficulty of breathing (dyspnoea) is a prominent symptom. He finds that healthy persons, as well as in sufferers from dyspnoea, the inhalation of six to ten drops of iodide of ethyl six or eight times a day causes the respiration to become freer (an effect which lasts some hours). There are, however, no soporific or anæsthetic effects, and the heart's action and the circulation are undisturbed. An attack of coughing frequently comes on after treatment. This compound has been previously recommended as a means of bringing the system rapidly under the influence of opium, and has been used in chronic pulmonary diseases with satisfactory results.

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HEARTY SUPPERS.—We should be sorry to think, even if it were possible to do so, that pharmacists were more given to indulging in hearty suppers than the rest of the world. But it is for us to know, as it is well for everybody to know, that a hearty supper is a dangerous and sometimes a fatal thing. If there is any trace of heart disease—and who of us can be sure that he is quite untainted?—a hearty supper may be the last to light the powder, the crack in the dyke through which life will escape. The full stomach will press on the diaphragm, and the diaphragm will press immediately on the lungs, impeding its action, giving it harder work to do, causing the heart therefore to palpitate and the lung to labour in what is called dyspnoea or difficulty of breathing. In the *Sanitary Review* for March 1 two cases are recorded where the result of a hearty supper was sudden death.

* *

THE REAL VALUE OF MEDICINAL BATHS.—Nature informs us that at a recent lecture held at the Rudolphinum, at Vienna, before a large audience, Dr. E. Lewy proved that the human skin is completely impenetrable for the chemical contents of mineral waters, and that therefore the explanation of the effects of baths in these waters, at the numerous bathing-places, has sought exclusively in the domain of physics and not in chemistry. This important discovery annuls all conclusions regarding the bathing cures effected by the various mineral springs, and explains in the simplest manner that, from a chemical point of view, the action of the most different waters must be one and the same. We need not point out that an assumption so sweeping as this will need considerable investigation before it can be implicitly received.

* *

BURNS AND SCALDS.—It will be remembered that considerable interest was excited a few months ago by some experiments made by a certain American doctor which, had they been tried by any body but his own, would have been denounced as barbarous in the extreme. This gentleman poured boiling water over his chest in such quantities as to produce a dreadful scald. He then applied bicarbonate of soda with the effect of producing immediate relief and a cure so marvellously rapid that one can hardly believe the accounts of trial by ordeal in which suspected criminals plunged their hands into boiling water or lifted red-hot iron. Their hands were then bandaged and left without further attention or inspection for three days, when, if they exhibited signs of the injury, they were considered innocent. Bicarbonate of soda, or the older carbonate, may have been the secret of any escape. Marvellous as the effects of this application may seem, Mr. F. W. Cock, Jun., has communicated to the *British Medical Journal* an extract from the second edition of James Ferguson's "Introduction to Electricity," published in 1855, which shows that equally startling effects may be produced in other ways. The extract runs as follows:—"One day my wife happened to scald her wrist by boiling water. I placed her upon the glass stool directly, and took sparks from the fire. In a short time the redness of the skin (occasioned by

the scald) began to disappear and she felt immediate relief. A linen bandage was then put round her wrist, and in a few hours after I repeated the operation, which entirely cured her, and there was not the least blister on the skin, nor any difference in its colour from what it had before the accident. If it had not been taken immediately, and before a blister had risen, perhaps electrifying would have been of little or no service."

* *

MR. ERASMUS WILSON, F.R.S., has been elected president of the Medical Society of London. A writer in the *Medical Examiner*, in noting this honour, says that it was while he was sub-editor of the *Lancet* some thirty years ago and more, and at the suggestion of Mr. Wakley, that Mr. Wilson devoted himself to the special study of skin diseases. Cleopatra's Needle in London will be a lasting proof of the sagacity of the choice.

* *

BROKEN NOSES TO MEND.—Ever since 1861, William Adams, Esq., F.R.C.S., has been practising with considerable success as a mender of broken noses. He finds two classes of results from this accident—one in which the cartilaginous septum is depressed and bent laterally so as to plug one nostril, obstruct the breathing, alter the voice, and produce other unpleasant effects. In the other the nasal bones were actually fractured in addition to the other complications. The proposed operation consists in straightening the bent cartilaginous septum by large flat-bladed forceps, and when possible in raising the lower margins of the fractured nasal bones; the septum is afterwards retained in its place by an ivory clamp, and the nose is kept in an improved position by a nose-truss worn externally. In several cases he has completely removed this distressing deformity. It was found generally necessary to wear the retentive apparatus for some time, and to use the ivory clamp continuously for three or four days and nights, afterwards applying it only at night. The nose-truss has to be worn during the day for several months.

* *

HYDROPHOBIA.—The *Medical Press and Circular* for some time past has been devoting a portion of its pages to the publication of a long series of cases of reputed hydrophobia. These were brought to a conclusion on February 27. The series includes no less than 145 distinct cases, of which the fullest possible details are given. In many cases, however, the only records are so imperfect that for scientific objects they are almost useless. In a general summary of the cases we are told that under the head of "hydrophobia," numerous cases are included, which have no analogy with the specific disease, produced by the bite of a rabid animal. The distinctive symptom of "hydrophobia," so named, may occur in other affections, characterised by symptoms, equally distressing, intractable, and oftentimes fatal. That nearly every form of treatment has been employed, suggested either by superstition, empiricism, or reason. That there have been numerous reputed cases of recovery, some of which are undoubtedly genuine. Beyond this the present state of our knowledge allows of but little advance grounded on unimpeachable bases.

* *

DOCTORS' FEES.—"In consequence of the enhanced cost of provisions," and for sundry other reasons, some of our great London physicians are trying to get an additional guinea for the not very laborious task of a ten minutes' consultation. It is to be hoped that the public will firmly resist every such attempt, though it too often happens that when the bland gentleman remarks that his fee is two guineas, the nervous patient pays the amount rather than have a scene. We heard of a lady quite recently who visited a West-end physician with a certain reputation in neurotic affections. The lady was forewarned; consequently, when the demand for a further guinea was preferred, she was able truthfully to reply that she had not come prepared. His learned eminence was profuse in his apologies; it was of no consequence; didn't matter the least in the world. Such resignation is very charming, and it may be perfectly professional, but it scarcely chimes in with our more delicate commercial notions. It is sometimes pleaded thus: If all consulting physicians charge at the same rate, what is to become of the less eminent? To which we reply: If they must live, though the necessity has yet to be demonstrated, let them adopt the quite reasonable plan of charging half a guinea, or else adopt some more likely means of working up a reputa-

tion. Respecting this matter we have been much pleased with a leading article in the *Philadelphia Medical and Surgical Reporter*, from which the following is an extract:—"While, no much as anyone, we recognise that the practice of medicine is, in the first instance, a business, out of which the doctor gets his living, yet it is also a learned profession, supposed to be governed by principles a little higher, rather more liberal than, for example, horse-dealing or huckstering. It is matter of common remark in this city, and doubtless in others, that many leading men in the profession appear to vie with each other in ostentatious expenditure; and this competition it is that forces them, in many instances, to charge at a rate for their services which they are not worth by any fair estimation. An ophthalmologist of our acquaintance asked and obtained from a man of limited means five hundred dollars for an operation of cataract. The patient paid but complained; the operator's argument was that the use of the eye was worth that amount to the man; and this absurd argument we have several times seen brought up, in one or another form, as a convincing one. Whether the charge was excessive or not we shall not discuss, but this argument is that of a quack and a monopolist. A goblet of water to a man dying of thirst is worth his fortune; he would gladly give all his gold for it; but what would we think of the man base enough to require that price for it? The monopolists of the middle ages were wont to buy up all the wheat of a district, and only sell it when famine forced the people to pay thrice or four times its usual value. Their estimate of value was that of the ophthalmologist quoted above."

SORE NIPPLES.—Besides the treatment which we quoted last month the *British Medical Journal* gives space to other suggestions. Dr. Lush, of Weymouth, recommends during lactation Dr. Blaquière's remedy of 10 grains of extract of rhatany with 150 of cocoa-butter. Dr. Murphy remarks that women who have small nipples, with numerous folds of thin delicate epidermis at the base and tip, are much more prone to chaps than those whose nipples are smooth, prominent, and well developed. The prophylactic treatment, therefore, consists in hardening the epidermis, removing the folds, and making the nipples as prominent as possible; and to obtain these results it is best to begin some few weeks before the end of pregnancy. If chaps do form he has found no treatment equal to passing a sharp point of nitrate of silver well down to the deepest portion of the chap and freely cauterising it all round, and then giving the nipple as long a rest as possible. In addition to the caustic, which should be used once a day, a little glycerine and tannic acid may be applied; and the nipple should be well washed before the child is again put to the breast.



DELINQUENCIES OF THE PHARMACEUTICAL SOCIETY.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—Will you allow me space in your valuable journal to inform my brother chemists how the Pharmaceutical Society lacks energy in prosecuting those who infringe the Pharmacy Act.

According to the Pharmacy Act, clause 17, it is unlawful to sell any poison unless the box, bottle, &c., be distinctly labelled with the name and address of the seller. Now, sir, a short time since a member of the society sent a letter to the secretary with a label of white precipitate enclosed, and on that label no name of the seller appeared; and it is a fact that all poisons are sent from the establishment from which this article came are likewise unlabelled. One would have thought the Pharmaceutical Society would have immediately taken the matter up and prosecuted the proprietor.

The reply from the secretary was, "The case being one of improper labelling is one which may be taken up by any person without reference to the society." I wonder if the respected secretary thinks that any private individual would prosecute

such a case at his own expense. I can scarcely think the society too poor to take up such a matter, but I maintain it is their duty to prosecute in all such cases.

It is becoming now a practice for chemists' assistants who have not passed any examination to join a medical man in a retail shop. The former by law cannot have his name on the labels, the latter considers himself a step above it, and I think it is quite time the society commenced to take action in defending those gentlemen who have honestly and fairly obtained their certificates, and who certainly carry out all that the Pharmacy Act requires.

March 4, 1878.

Yours obediently,

R. C. D.

WHAT IS COUNTER PRACTICE?

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—The Apothecaries' Society has been pleased to make certain concessions and communications, not to the Chemists and Druggists' Trade Association, but to the Pharmaceutical Society. Perhaps it is supposed that by this course the honour of the Society is saved.

But what is the real value of those concessions? What do they mean? We are advised in the *Pharmaceutical Journal* of February 23, not to consider this question seriously. But we are not to bring charges of bad faith against anybody (we were done covertly in that journal) we must know what the Apothecaries' Society means by counter practice. The solicitor of that society must be believed. The Medical Defence Association, however bitterly we may resent their action, must be regarded as acting honourably and in good faith. Yes, sir, the solicitor says, he cannot find a record of any prosecution authorised by the Society on the ground of counter practice only! The Medical Defence Association has conducted a campaign which turn solely on counter practice as we understand it. Does it not therefore follow that what we mean by counter practice and what the Apothecaries' Society means by it are two different things? They mean probably that if a man asks us for a diarrhoea mixture we may make it for him *secundum artem*. We mean certainly that if a man comes to us knowing what is the matter with him we may try to find out his complaint, and then prescribe for him *secundum artem*. This is the case we have no need to accuse the Defence Association of obtaining the authority of the Apothecaries' Society, allegations subsequently suppressed! But have we not reason to complain of those, the so-called protectors of our interests who so carelessly accept a broken reed, and commend it to us as a stout staff of defence? Not once in the communications either solicitor is the term counter practice defined, and never can we rest in peace until we have in black and white the meaning of this most important but indefinite term.

I am, sir, yours respectfully,

A CHEMIST AND DRUGGIST.

THE PRELIMINARY EXAMINATION.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—A correspondent in your last issue is startled at the number of failures at the last preliminary examination, which suggests to him an inquiry into the conduct of the examiners.

What does our friend mean by catch-questions and quibbles in a written examination? Would he have the questions dictated in progressive arrangement, in school-boy style so to speak, to make the examination a test of presence rather than of power; or would it meet his view to give a key to local secretaries, or rather to such local secretaries as himself, that candidates might catch the reflection of such a sunbeam of light from the anxious brow of their mediator? (not the sun itself). Then, and only then, I apprehend, would the desires of a philanthropic spirit be realised. The former plan would encourage that intolerable cram system, and the latter speaks for itself; both would tend to land us in oblivion as a profession.

I quite concur with your correspondent in the injustice done to candidates by keeping them three weeks or more in suspense

their examination. I have experienced that fate myself, so speak feelingly. But the examiners are further accused of courtesy! What can be more courteous and parliamentary than the Registrar's intimation, "I beg to inform you," &c.? The latter part of his text, "but no further information will be given," is quite a discovery to me. Perhaps your correspondent found a mare's nest. When I failed on writing to the Registrar I obtained all the necessary information which Mr. Bates afforded for his clients. The want of courtesy with which the examiners are charged is committed in the closing words of the letter. No words could be more illiberal, more indelicate, and more becoming; in fact, the letter contains nothing but a heap of precious and phantomic grievances.

I am, sir, yours, &c.,

E. F. W.

March 1, 1878.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—I was very pleased with the manly, outspoken letter of Mr. Bates in your valuable journal respecting the unnecessarily severe, and consequently unjust, Preliminary Examination. I have been in the business more than 25 years, and have travelled in London and the provinces. I have also conversed with persons of considerable experience, and I must say that the requirements of the business do not justify such cruel and oppressive examinations, the result of which is not only to make unsuccessful students suffer, but likewise their parents, who are obliged to pay scholastic aid, and to pay guinea after guinea to satisfy the unreasonable demands of this money-getting society. There is an unjust law in England, the people have only to appeal against it, and in most cases they can get it altered for the better; but so despotic is the power of the Pharmaceutical Society that even this privilege is not granted.

The only remedy I see for this evil is to form a society of sensible men who would use the power vested in them for the good of the trade at large instead of their own interests, and to their best to prevent outsiders from selling drugs of any description, and who would exercise their influence in procuring examinations with moderate fees.

This could be accomplished every honest man would stand in need of getting a living, and there would be no necessity of wholesale pharmaceutical chemists by examinations to sell worthless pills at 4d. a doz., to be retailed by the grocers; trade in flourish, and more prosperous times would be in store for us.

In conclusion I must say that I heartily wish that the axe would be laid at the root of the useless and fruitless Pharmaceutical Society and that the command had gone forth, "Cut it down: why doth it the ground?"

Grosvenor Road, Bristol.

Yours respectfully

February 18, 1878.

T. WADDE.

CHARGE OF THE LIGHT BRIGADE.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—A graduate of a foreign University, a registered chemist, and myself have framed the following Amendment to the Apothecaries' Act. Sixty Members of Parliament have been interviewed, and we have communicated with Lord Ripon for his lordship to further it in the House of Lords; but before we can commit it, we send you a draft of it for publication in order to obtain the opinion of the trade.

I am, Sir, your obedient servant,

ROBERT OWEN FITCH.

10 Well Street, South Hackney.

APOTHECARIES ACT (1815) AMENDMENT.

A BILL TO AMEND THE APOTHECARIES ACT OF 1815.

WHEREAS an Act was passed in the reign of His Majesty George III. (July 5), entitled "An Act for the better regulating the Practice of Apothecaries throughout England and Wales,"

and whereas it is expedient to amend the said Act,—

It is therefore enacted by the Queen's Most Excellent Majesty by and with the advice and consent of the Lords Spiritual and Temporal, and Commons in this present Parliament assembled, and by the authority of the Queen's Majesty, as follows:—

That to section 20 of the said Act the following words be added:—

"Provided always that no penalty be recoverable from anyone holding a Diploma from the Royal College of Physicians, or Surgeons, or of any licensing body empowered to grant diplomas in England or Wales, or of any licensing body in Scotland or Ireland, or from any colonial or foreign University, whether registered or otherwise."

II. That section 28 of the said Act is hereby repealed, and in lieu thereof it is enacted,

"That nothing in this Act contained shall extend, or be construed to extend, or prejudice, or in any way to affect the trade or business of a chemist and druggist in the buying, preparing, compounding, dispensing, counter-prescribing, and vending drugs, medicines, and medicinal compounds, wholesale or retail, but that all registered chemists shall be exempt from the provisions of this Act."

III. That in section 30, after the words, "As in case there shall be a continuation of damages, then after six calendar months next after the doing or committing such damages shall have ceased, and not afterwards," the words to be put in:—

"But no fresh action shall be commenced without a meeting of the Master Wardens, &c., in the Hall of the said Society, ordering a fresh prosecution; and no such prosecution shall take place without a fresh notice be issued from such meeting to the party to be prosecuted, signed by the chairman of the meeting."

IV. This Act to be read with and form part of the said recited Act.

V. This Act to be recited for all purposes as the "Apothecaries Act Amendment Act."



THE SALE OF METHYLATED FINISH.

AT Worship Street, on February 21, Mr. Thomas Sanders, a chemist, of Abney Park Terrace, Stoke Newington, appeared to a summons charging him with having sold methylated spirits without being licensed. Mr. Highmore appeared for the prosecution on behalf of the Inland Revenue authorities. An inspector proved that on November 8 he purchased at the defendant's shop a half-pint of spirit which purported to be "methylated finish," but which, on being analysed at the laboratory, Somerset House, was found to contain less than the required amount of gum. A gallon of methylated spirits to be sold as "finish," for which no license was necessary, was required to contain 3 ozs. of gum, and the contention for the defence was that if in the portion analysed there was less than the proper proportion of gum it was the result of accident. The defendant, who conducted his own case, cross-examined the scientific witnesses, and submitted that the analysis should have been conducted by troy weight, and not avoirdupois, as had been the case, as then the proportion would have been correct. This, however, was denied. The defendant also submitted that as by evaporation of the spirit part of the gum was deposited, the surface of the liquid did not, when poured off, carry with it its proper proportion of gum. The admixture, he said, was made not merely for the trade of polishers and cabinet-makers, but to prevent methylated spirit being drunk, as was at one time customary in the North of England. The defendant complained of the time the authorities had allowed to elapse before taking proceedings, and added that, as a chemist, he had purchased methylated finish of the manufacturers and sold it as it was supplied to him. He was, therefore, ignorant whether or not it fulfilled the requirements of the Act. He had, however, analysed a portion for himself since the complaint, and found that it did within a grain or two. One witness was called for the defence to prove the sale to the defendant, and that it was sold as "finish" with the proper admixture of gum. Mr. Bushby decided against the defendant, and required him to pay the minimum fine of 12l. 10s.

PROSECUTION OF A LIMITED COMPANY UNDER THE PHARMACY ACT.

AT Marlborough Street Police Court, on Tuesday last, three summonses taken out by the Pharmaceutical Society of Great Britain against Arthur Polley, secretary of the London and Pro-

vincial Supply Association (Limited), 113 Tottenham Court Road, and William Mackness, same address, for selling poison—oxalic acid and red oxide of mercury—without distinctly labelling the wrapper or cover in which such poison was contained with the name and address of the seller of such poison, contrary to the Pharmacy Act of 1868, were heard by Mr. Newton. Mr. Flux, solicitor for the society, appeared to support the summonses, and Mr. Saunders was counsel for Mr. Mackness. There was a good deal of preliminary discussion, principally on technical points relative to the construction of the precise words of the Act, in the course of which Mr. Flux said the proceedings were taken in the interest of the public, that if poisons were sold in an improper manner, and injury to the buyer was the result, the law should be put in motion to reach the offending party. In the present case he should prove that oxalic acid was sold screwed up in paper, as if it were a lollipop, without the precautions on the wrapper required by the Act. If the society, with the information at its command, had neglected to take steps, they would have failed in their duty. Mr. Joseph Ward having proved the purchase of oxalic acid at 113 Tottenham Court Road, Mr. Saunders' objection was that a limited company being a corporation could not be sued at all. It appeared that Mr. Mackness carried on business as the London and Provincial Supply Association (Limited). He had to pay a penalty under the Pharmacy Act and then sold his business to the present London and Provincial Supply Association (Limited). Mr. Newton decided on looking into the legal position of the question raised and adjourned the summonses.

BANKRUPTCIES AND LIQUIDATIONS.

HORNER & BARKER, MANCHESTER AND GLASGOW.

A GENERAL meeting of the creditors of William Whitfield Horner, late of Tamworth House, Burnage Lane, Withington, but now of Clarence Hotel, Piccadilly, Manchester, and George Barker, of No. 4 Apsley Terrace, Stretford, trading in co-partnership together at Globe Works, Brewery Street, Ardwick, and at George Street, Whiteinch, Glasgow, under style or firm of "Horner & Barker," as engineers and machinists, was held at the Mitre Hotel, Cathedral Yard, Manchester, on March 7. Mr. Joseph Snape, of Salford, was voted to the chair, and there was a large attendance of creditors.

Mr. George Williamson, the receiver, was first asked to read a statement of the affairs of the debtors, which showed:—

<i>Liabilities.</i>		£	s.	d.	£	s.	d.
Unsecured creditors					7,625	13	11
Creditors fully secured		740	0	0			
Estimated value		1,700	0	0			
		960	0	0			
Creditors for rent, rates, &c.					32	10	0
Liabilities on bills discounted, 1,162 <i>l.</i> 15 <i>s.</i> 6 <i>d.</i> , of which it is expected will rank against estate					389	4	0
					8,047	7	11
<i>Assets.</i>		£	s.	d.			
Stock-in-trade at Manchester and Glasgow		250	0	0			
Book debts 594 <i>l.</i> , estimated to produce		1	4	1			
Cash in hand		15	0	0			
Bills of exchange		130	0	0			
Furniture, fixtures, &c., estimated to produce		500	0	0			
Property, as per list "G" patent rights		960	0	0			
Surplus from securities					1,856	4	1

The property, as per list "G," was set out as follows:—

	£	s.	d.
Patents:—Steam-kettle, automatic rack, and nozzle and stopper	500	0	0
Plant and stock on premises at Brewery Street, Manchester, 1,500 <i>l.</i> , on which Miss Barker holds a mortgage for 600 <i>l.</i>	900	0	0
Plant and stock at Whiteinch, Glasgow, valued at 200 <i>l.</i> , on which Mr. Tennant has a lien for 140 <i>l.</i>	60	0	0
Furniture and fixtures at Brewery Street	100	0	0
Other property	30	0	0
	1,890	0	0

In answer to Mr. Burton the Receiver said many of the bills were accommodation bills; but he could not say then how many of them.

Mr. Burton: Were the patents valued by a practical man?

The Receiver: No; I estimated them at 500*l.* myself. Mr.

Horner thought that was too little, and Mr. Barker thought it was too much. At first Mr. Horner got credit for 800*l.* for them.

Mr. Burton: When was this mortgage for 600*l.* given to Miss Barker?

Mr. Dewhirst: The mortgage is dated two days before the petition was filed. It was given in pursuance of an agreement for a mortgage made in November.

Mr. Burton: Is that agreement stamped?

Mr. Dewhirst: Yes; I have seen it.

A Creditor: That is a nice little family arrangement.

Mr. Dewhirst: Not at all.

The Chairman: Oh! yes it is.

Mr. Dewhirst: The arrangement was come to before the petition was filed.

Mr. Adams: It does not follow that it is of any value.

A Creditor: Are there any more of these family arrangements?

Mr. Dewhirst: Not that I am aware of.

Mr. Burton: Has Mr. Horner any personal property?

The Receiver: There are three insurance policies upon his life.

Mr. Adams: What became of the proceeds of his carriage and furniture?

The Receiver: They realised about 450*l.*, and he paid that into the bank to the credit of Horner & Smith.

Mr. Sampson: How long before the petition was filed did the transaction take place?

The Receiver: I cannot say.

Mr. Fletcher: Is it not within a month?

The Receiver: I don't know.

Mr. Dewhirst, in reply to questions, said the debtors had no offer to make.

Mr. Horner was then called into the room, and in answer to questions put to him by Mr. Sampson, he said Miss Barker refused to advance the 600*l.* without security, and he had signed an agreement to execute a bill of sale whenever called upon. She gave him 600*l.* worth of shares in the Transylvanian Railway Company, which he paid into the Union Bank and drew upon them. At that time he had not gone into his book to see how he stood, but he thought he was solvent. His affairs had not been investigated, and he did not know how he stood when he gave the bill of sale. He believed he was then all right.

Mr. Dewhirst said they (Messrs. Horner) prepared the agreement on behalf of Messrs. Horner & Barker, and it was signed before the money was advanced.

The debtor further stated that the firm of Horner & Smith were being pressed by Lomas & Jenkins, and he had got 600*l.* to pay them. He took the money from Horner & Barker to pay Horner & Smith. They commenced business as metal dealers in May, 1876. He put in 1,000*l.*, and Mr. Barker 512*l.*, and the latter also got a guarantee of 500*l.*

Mr. Sampson: Perhaps, Mr. Horner, you will explain why there is such a large deficiency.

Mr. Horner: We commenced business in May, 1876, and from that date up to the first week in February we paid between 8,000*l.* and 9,000*l.* in the following sums:—Wages, 2,100*l.*; advertising, catalogues, and sundries, 3,549*l.*; book debts 250*l.*; bad debts, 844*l.* (including one of 300*l.* at Glasgow). I have drawn out of the firm 678*l.* since May, and Mr. Barker has drawn 530*l.*; total, 8,000*l.* I have left out of consideration altogether the cost of the works. The partnership of Horner & Smith was dissolved, I believe, on January 31, and the sum of 2,600*l.* was then owing to them. Mr. Smith has no security for his loans.

Further questioned, the debtor said he sold his furniture, part of which was settled on his wife, to Mr. Davenport, of Loudon, for 350*l.*, and his father had repurchased it. His horse and brougham realised 100*l.*

Mr. Davenport explained that in January the defendant made him an offer of his furniture, and on the distinct assurance that he was only embarrassed and not insolvent he bought the goods. The receiver had informed him that the money had been properly accounted for.

The Receiver, in reply to the Chairman, said the books of the firm had been very badly kept, and were much behind when he took possession.

Mr. Barker was called and asked about the 600*l.* He said at the end of last year Horner wrote him several letters stating how much money he had in the concern, and complaining that

(arker) had so little in it. He got 600*l.* more and put in. subsequently ascertained that what Horner had paid in he paid out again.

The Receiver said books seemed to show that Horner joined in debt to the extent of 700*l.* or 800*l.*, and there seemed to have been payments of old debts.

The meeting then decided to liquidate the estate by arrangement and not in bankruptcy. Mr. Williamson was elected trustee, with Messrs. Snape, Jenkins, Ghent, Smith, and Free, a committee of inspection. Messrs. Horner were entrusted with the registration of the resolutions. The discharge of the trustees, or either of them, was left with the committee of inspection.

The following is a list of the principal creditors:—

	£	s.	d.
Bams, E. M., London	15	12	8
Blanton, Thomas, & Sons, Birmingham	55	0	0
Blacklock, H., & Co., Manchester	19	0	0
Barker, Miss Eliza, Aberford	625	0	0
Barker, George, & Co., Manchester	115	0	0
Bennetts & Wakeham, Birmingham	10	10	0
Bennetts, John, Manchester	21	0	0
Beverport & Co., London	352	0	0
Burton, E. R., Manchester	16	16	0
Burwiles & Ogden, Manchester	75	0	0
Clether, John, Ashton-under-Lyne	50	0	0
Clelding, J. A., Manchester	14	0	0
Cleeman & Co., Manchester	38	0	0
Cleatrix, jun. & Brothers, Manchester	18	0	0
Cleeren & Son, Leeds	150	0	0
Cleibert, Charles, London	57	17	4
Cleall & Tiekles, Manchester	31	0	0
Cleorner & Smith, Manchester	2,636	0	0
Cleameson, D., Glasgow	25	0	0
Cleandall & Gent, Salford	110	0	0
Cleomas, Jenkins & Co., Manchester	83	0	0
Cleomas & Gyte, Manchester	13	0	0
CleCalla, C. A., Birmingham	36	13	0
Cleuttall & Co., Saint Helens	25	0	0
Cleewton, Keats & Co., Manchester	52	0	0
Cleownall & Co., Manchester	22	0	0
Clehe Textile Manufacturer, Manchester	12	0	0
Clehe Engineer, London	50	8	0
Cledy, London	11	5	0
Clehe Chemist and Druggist, London	24	0	0
Cle Russell, John, & Co., Manchester	48	0	0
Cle Robinson & Sandeman, Manchester	19	0	0
Cleape & Son, Salford	163	0	0
Cle Smith & Tetley, Manchester	21	0	0
Cleam Printing Company, Salford	114	0	0
Cle Smith, J. G., London	15	17	9
Cle Smith W. G., Southport	1,050	0	0
Cle Thompson, McKay & Co., Manchester	10	0	0
Cle Turner, F. J., Manchester	16	0	0
Cle Tennant, A. A., Glasgow	140	0	0
Cle Union Bank of Manchester	900	0	0
Cle Tade & Myatt, Burslem	12	0	0
Cle Tatkinson & Co., Manchester	13	0	0
Cle Turner & Son, Manchester	25	0	0
Cle ough, Thomas, Chowbent	50	0	0
Cle Shepherd, James, Manchester	32	10	0
Cle Mackay, Murray & Co., Glasgow	20	0	0
Cle Glen, Harrison & Co., Manchester	5	0	10
Cle Roadhead, W. H., Manchester	5	0	0
Cle The Clifton and Kearsley Coal Company, Manchester	5	0	1
Cle uek, W., Salford	3	16	9
Cle Sheroft & Co., Manchester	3	4	5
Cle Lawes, H. & J., Manchester	3	10	5
Cle The Executors of John Hargreaves, Salford	4	8	6
Cle Hunt, N., Lower Broughton	3	9	4
Cle Harper, J. P., Manchester	9	18	1
Cle Alliday, J., Manchester	6	10	11
Cle Leigh, John, Manchester	8	2	6
Cle Mason, S., Birmingham	5	8	7
Cle Under & Co., Manchester	6	12	6
Cle Weston & Herdman, Manchester	4	5	8
Cle The Standard Victuallers' Gazette, London	4	4	0
Cle Harp, R. H. & J., Manchester	3	15	0
Cle Smith, W., Manchester	4	4	6
Cle Turner, T., & Co., Wombwell	3	0	0
Cle Taylor, Tunnicliffe & Co., Hanley	8	12	8
Cle Wilkes, Mapplebeck & Co., Birmingham	4	6	2
Cle Wilkinson, J. F., Pendleton	4	16	0

Meetings were afterwards held in the separate estates of the trustees. Mr. Horner's liabilities were stated at 250*l.* 13*s.* 5*d.*; assets, nil. Mr. Barker's liabilities were put down at 18*s.* 6*d.*; assets, 50*l.* In both estates similar resolutions were passed as in the joint estate.

The Poison Cupboard.

SALTPETRE.—The *British Medical Journal* reports a case of poisoning at Penicuik, Scotland, due to a man swallowing a quantity of saltpetre instead of Epsom salts.

NEW PHYSIOLOGICAL PROPERTY OF STRYCHNIA.—It is asserted that strychnia, by increasing the arterial pressure, increases the secretion of the mammary glands in some cases as much as fifteen-fold.—*Druggists' Circular*.

A CASE of poisoning by aniline is reported from Coburg. A woman had injured her skin and allowed her coloured stocking to remain in contact with the wound. Symptoms of blood-poisoning soon appeared, and the patient died ten days after the injury. In the opinion of the medical attendants the symptoms were due to the absorption of the aniline with which the stocking was coloured.—*Medical Examiner*.

A DANGEROUS ADDITION TO A QUININE MIXTURE.—A correspondent of the *Indian Daily News* records a remarkable case of poisoning at Peshawur. A native, having to make up a quinine mixture for the wife of an officer on the station, added hydrocyanic acid as a solvent of the quinine. The mixture was taken and death was instantaneous.

OPIUM IN MAINE—The Brunswick (Me.) *Telegraph* says:—“Every intelligent reader knows that the use of opium has increased enormously in this State within a few years, the direct result, without a doubt, of the enforcement of the liquor law in many of the larger towns and cities. We learn upon good authority that one of the largest firms of manufacturing chemists in the country says that more morphine is sold in Maine, in proportion to its population, than in any other State of the Union.”

MILK AS A PREVENTIVE OF WHITE LEAD POISONING.—A singular fact is given in the *Journal de Médecine* of the effect of the habitual use of milk in white lead works. In some French lead mills it was observed that in a large working population two men who drank much milk daily were not affected by lead. On the general use of milk throughout the works the colic vanished entirely. Each operative was given enough extra pay to buy a quart of milk a day. From 1868 to 1871 no cases of colic had occurred.—*Sanitary Record*.

POISONING BY STRYCHNINE.—Dr. W. E. M. Quiston, of Atoka Tennessee, records a case of recovery from poisoning by strychnine. A young woman on September 13, 1877, took a dose of strychnine to commit suicide. Ten minutes after she wished she hadn't, and asked her parents to send for a doctor. When he came he administered chloroform, which produced an immediate improvement. A strong emetic was given and the stomach kept full of sweet oil, white of eggs, and linseed tea, while mild inhalations of chloroform were administered as occasion seemed to demand. The result was a complete recovery within a comparatively short time.

SNAKE POISON.—Mr. Pedler has been making some elaborate experiments on snake poison, with a hope of discovering an antidote, but hitherto without success. His results are published in the “Transactions of the Royal Society.” Ammonia, as an antidote for application to the wound, he has proved to be utterly worthless. Iodide of methyl and hydrochloric acid diminished the activity of the virus, and platinum perchloride formed with it an almost insoluble and inert compound. Neither of these substances, when injected after the poison, proved capable of preserving life. Artificial respiration has caused, in several instances, an apparent revival of life in persons and animals who seemed to be already dead, but in no case has it averted the fatal issue.

METHYLATED SPIRIT AS A POISON.—Dr. Viger, of Caen, has had two patients to deal with, both prisoners, who had stolen varnish from the gas-lamp-makers' shop, precipitated the resin with water, and drunk the methylated spirit. One of them came to him complaining of violent pain in the head and stomach; he soon became completely prostrated, and died on the following night. The other, says the *British Medical Journal*, was found “perspiring in a stupefied manner” with his pupils much dilated. He soon fell into coma, with complete insensibility, and next day became violently delirious. The delirium soon abated, but the pupils were still dilated and his sight was completely lost, to be only partially restored twenty days later.

TRIC ACID FOR HOARSENESS.—Dr. W. Handsell Griffiths states that a few drops of nitric acid in a glass of sweetened water, a couple of times a day, will be found an excellent remedy for the hoarseness of singers. One of the largest fees received by him—so he says—was for this prescription.

PROFESSOR GALLOWAY has analysed a substitute for hops, advertised in one of the brewers journals, and finds it to be simply coloured picric acid.

A POWERFUL ANTIDOTE.—The *Journal of Applied Science* for February says:—"A poison of any conceivable description and degree of potency which has been intentionally or accidentally swallowed may be rendered, almost instantly, harmless by simply swallowing two gills of sweet oil. An individual with a very strong constitution should take nearly twice this quantity. This oil will most positively neutralise every form of vegetable, animal, or mineral poison with which physicians and chemists are acquainted." We hope no one will be so simple as to try this antidote, or the editor of the journal may have a life to answer for. The idea that sweet oil will neutralise such poisons as prussic acid, curara, or strychnine, requires no refutation.

OPIUM AND ATROPINE.—On February 14 a woman was brought to the West London Hospital, having taken, at 11 A.M., 12 to 17 grains of opium in the form of laudanum. She was treated in the usual way till 2 P.M., when respiration was rapidly failing. At that time Dr. Milner Fothergill made his usual visit, and, guided by experiments made on animals for the British Medical Association, he injected under the skin of the forearm one grain of sulphate of atropia ($\frac{1}{15}$ of a grain administered by the stomach is an ordinarily prudent dose), and the woman was put into a warm bed. After the first ten minutes she steadily improved, and the recovery was complete, no symptoms of atropin poison showing themselves. It is stated in the report of the case that the failure of respiration, and the consequently reduced bodily temperature brought on by opium, is more to be dreaded than its narcotic effect. The atropia, as Dr. Fothergill's experiments amply prove, at once arrests this failure if it be administered in a sufficiently large dose. "This is probably the first time that a fatal, or what is thought to be a fatal, dose of one drug has been administered at once (*i.e.*, not in dribbles) to arrest and antagonise the lethal action of another drug, to a human being."

STRAMONIUM POISONING.—Two pupils of the Moscow Horticultural School have involuntarily experimented on themselves on the action of stramonium seeds on the human system. Both took, by mistake, a full tablespoonful of the seeds. Within ten minutes they began to experience a feeling of dryness in the mouth and throat, head-ache, and giddiness, and soon after a kind of intoxication. Five hours after taking the seeds in each patient was noticed redness of the face, dilation of the pupil, almost to the obliteration of the iris, dryness and congestion of the mucous membrane of the mouth and throat, the teeth were clenched tight, swallowing was difficult, the bowels constipated, pulse hard, 104 to 108, temperature little elevated (100° Fähr.), respiration normal, but the behaviour of the patients was most uproarious. Sensibility and reflex action seemed but little increased, and cramps were not present. The treatment consisted of cold fomentations to the head, mustard paste to the lower extremities, and subcutaneous injections of morphia, which neither patient could take by the mouth. One patient fell asleep after the injection of one-sixth of a grain, the other required one-third of a grain of morphia. After a long sleep both awoke refreshed and in full possession of their senses, and the symptoms disappeared so rapidly that they were discharged cured on the third day.—*Pharm. Zeitung*.

ON DENTIFRICES.

DR. HOMER TREGO has an article in *Hull's Journal of Health* (an American publication), in which he something more than decimates our present available choice of ingredients.

Nearly all physicians and many dentists, he says, recommend Castile soap or charcoal. All druggists use orris root, gum myrrh, orange peel, sugar, prepared chalk, soap, etc., as the body of dentifrices. If they will investigate thoroughly they will find that they are very wrong. Soap, for instance, does not clean teeth. The same amount of friction with the brush and water will cleanse them better. The soap serves as a lubricator, causing the brush to glide smoothly over the teeth and gums; hence its popularity. No reasonable amount of scrubbing will remove the viscid effects of the soap from the mouth; it remains there as an irritant to the soft parts of the teeth and mucous

membrane, and as an absorbent of calculi, forming a base for tartar, gangrene and decay. Fine soaps are composed of olive oil and soda. The olive oil is certainly not detestive, and the soda certainly is a dangerous alkali. Mottled soaps are made so by use of green vitriol and sulphuretted ley. A still greater danger is in store for those who use soap as a dentifrice. The cheaper grades are made of cheap ley and common oil, or more frequently of animal fat, which is very often from animals that died of disease or poison, in and near large cities where the soap factories exist. Bad cases of diseased mouth are frequent subjects in the colleges—directly traceable to the use of soap. I have numerous cases of loose teeth—where every tooth seems to be lying around in a bed of ulceration. Ask the patients what they have used as dentifrices and the reply is soap, prescribed by Dr. Pillgarlick.

The most advertised tooth-wash extant is popular because it produces a froth in the mouth. It is composed of water, rum, and soap bark (*quillaya saponaria*). The active principle of this bark is an acrid vegetable alkali. Well-known chemists and dentists who have tested it pronounce it positively injurious, especially when used any length of time by delicate ladies and children. Rum and myrrh, as a mouth-wash, produce a froth. Myrrh is bad on account of being too pungent, and depositing a resinous precipitate about the teeth and gums. Orris root, orange peel, sugar, etc., are used only to add bulk and flavour, and on account of their pasty qualities are certain to leave deposits that form a dangerous nucleus for tartar—by absorbing acid and gas.

Charcoal, next after soap, is the greatest nuisance any intelligent professional ever persisted in prescribing. All they claim for it is that it scours dirty teeth, and, being carbon, it absorbs the acids. Every patient I have seen that continued its use over a year, has scoured his teeth and gums almost to ruin. Microscopical examination shows every atom to be a sharpened flake that scratches, like a diamond, everything it comes in contact with. It cannot be reduced to an impalpable powder. These flakes are forced in the interstices of the teeth and under the gingival margins of the gums, where they retain acids, and transmit them to sensitive parts which they would not otherwise reach. When charcoal has been used a short time, blue lines may be seen under the margin of the gums. After continued use the necks of the teeth become exposed and sensitive almost beyond remedy.

All gritty dentifrices have the same objectionable quality. Salt is both acid and alkali, and has no merit as a *fricans*.

All acids and alkalis, like the afore-mentioned ingredients, are absolutely dangerous in a majority of cases. Like stimulant beverages, they may not show their bad effects in a day or week, but in a few months or years they become uncompromising destroyers. Borax and alum, for their astringent qualities, may be used temporarily in certain aphthous affections and mercurial sore mouth. They should be mixed with honey, sugar, or sage.

For everybody's daily use for keeping the teeth clean and the gums healthy, a mild astringent, antacid, antalkaline, styptic wash is decidedly the most pleasant, cheapest, and only safe dentifrice known to the leaders of the profession. If properly prepared it dissolves the mucous calculi and other injurious secretions, and all can be readily removed from the mouth by the gentle use of a soft brush and rinsing with water.

In cases of predisposition to formation of tartar—from viscid secretions arising from disordered stomach—precipitated chalk should be used once a day, in connection with the wash. Always cleanse well between and on the inner sides of the teeth. Always use well-made brushes—those having plenty of soft bristles and badger's hair. For children, very small and soft brushes. Children's first teeth should be kept clean. They should be taught to brush their teeth every time they wash and comb their hair. "Cleanliness is next to Godliness," and the neglect of cleanliness is the direct cause of so much "tooth-ache and pain" being required. "Delays are dangerous and expensive."

"PROFESSOR AGASSIZ has recently estimated that a man's finger nails will grow to be 3,000 feet long if he leaves them uncut for 1,000 years." The next to discover is, how long a man's nose will become in half the time if he keeps poking it into business that doesn't concern him, and cannot be of the least use to the world in general. Will Professor Agassiz kindly say?—*Fun*.



DROP of extract of eucalyptus applied on cotton to the sensitive dentine just before excavating is said to be the best local anesthetic for dental operations.

Brown's wife went into the dentist's on Friday and took gas. Her new set of teeth is not ready; nor is she ready; and so she has been in peace in the Brown family for several days. As was remarked yesterday, "Her mouth is closed for repairs." *New York Herald.*

SAFETY MATCHES.—Lieutenant B. A. Muirhead has sent the following letter to the *Chemical News* and some other journals:—"I have recently found by experiment that the 'Special Safety Matches,' which profess to *ignite only on the box*, will strike fire on common coal, provided of course both materials be dry. One can verify this for himself, and the chemical reason is simple, viz., the combustible carbon of the coal takes the place and acts like, the amorphous phosphorus of the rubber. In fact, I think, will not only prove of general interest, but will also lead to the manufacture of a safety match without the employment of phosphorus, a result which, as observed by Hann, 'would indeed be a grand achievement.'"

MEDICAL MAGNETISM.—The effect of magnetism has hitherto been somewhat mysterious, but all is clear at last. Here is how explained by a firm of magnetisers. Their letter is quoted in the *Medical Times and Gazette*:—"Mrs. —: Madam, in answer to your favour of the 3rd inst., we beg to say that the action of 'magnetism' on the body is by induction on the iron in the blood, and magnetism will penetrate through indiarubber and other non-conductors of galvanism just as light penetrates through glass.—We are, &c., Darlow & Co., per H. Fairfax." **OLD GALVANISM!** He has broken down completely in the contest with this sprightly young competitor, which springs through indiarubber just like the clown goes through the hoops in the pantomime.

MORTAR STANDS.—The *Canadian Pharmaceutical Journal* contains the following:—"It is stated that sand, enclosed in thin sheet iron or iron walls, and thoroughly shaken down, is capable of sustaining very heavy weights, if they be placed directly on the sand, and quite free from the walls which retain it. So long as the pressure is vertical the sand will sustain far greater weights, and resist far heavier blows, than could be borne by blocks of wood of the same size. A box filled with sand will thus answer very well as a mortar stand, and certainly will not be subject to as much vibration as wood. If needful, a block piece of wood—a little smaller than the box, so that it will slip inside it—might be placed on the sand, and thus will form a surface on which the mortar might be kept perpendicular."

PHARMACIEN FINED FOR DISPENSING THE PRESCRIPTIONS OF AN UNQUALIFIED VETERINARIAN.—M. Lucas, of Andelys, France, on December 8, 1877, was subjected to a small fine for dispensing the prescriptions of a veterinary surgeon who had no diploma. The *vétérinaire* in question practises his art at Andelys; he has on his door, it appears, a plate, on which is inscribed the word "*Vétérinaire*;" his visiting-cards bear the same title. M. Lucas, like most of his neighbours, has always refused him to be registered, and has dispensed his prescriptions without a suspicion of wrong-doing, even when they were for deadly poisons. The pharmacien was somewhat astonished when he was told that he had broken the law and made himself the subject of judicial proceedings. The Act under which these proceedings are taken is probably Article 5 de l'Ordonnance royale du 29 Bre 29, 1846, which enacts that poisons shall be sold for medicinal purposes only by pharmaciens, and on the prescription of a physician or *vétérinaire breveté*. Although very willing to appeal against the sentence, M. Lucas has somehow allowed the opportunity of so doing to pass.

PONSÆLION.—This word is manufactured from Pons-Ælii, an ancient Roman name of Newcastle, and is intended to distinguish from vermilion a new mercurial pigment discovered by

Lewis Thompson. Ponsælion scientifically seems to be a hydro-erythride of the protosulphuret of mercury, and was first made by passing a sample of Newcastle gas (whence its name), loaded with carbon bisulphide, through a solution of bichloride of mercury in caustic potash. It is now made by boiling mercuric oxide in potassium cyanide solution, decanting, adding with agitation a considerable quantity of carbon bisulphide, and heating for half an hour on the water bath. At the end of this time the precipitate, which is at first black, becomes a scarlet powder of a very brilliant tint, differing from vermilion only in being less purple, and so little that an ordinary observer could hardly distinguish them. An eminent painter has declared that ponsælion is the nearest approach to the natural hue of the European complexion that has yet been produced. It is only attacked by aqua regia, and it is equally unaffected by sulphuretted hydrogen and light, so that it is practically permanent.

Trade Notes.

THE BUSINESS of the Chloralum Company has lately been transferred to Mr. Clifton Shield, of 15 Duke Street, St. James's, W.

* *

THE BUSINESS of Mr. T. R. Sharp, of Owston Ferry, Lincolnshire, has been purchased by Mr. T. L. Williams, late of Market Drayton, Salop.

* *

MESSRS. HILL & Co. have taken the business formerly carried on by Mr. C. Langford, Norfolk Street, Lynn. Valuers for the trustees, Messrs. Collis & Son, Cheadle; for the purchasers, Mr. E. Grimwade, Ipswich.

* *

MR. D. CARTNER, of 30 Castle Street, Holborn, who has carried on business as a manufacturer of coated pills, under the style of Cortis & Co., has now taken into partnership Mr. H. W. Pound, pharmaceutical chemist, and the business will henceforth be carried on as Cartner & Pound.

* *

MR. N. G. WILCOCKS, of Bath, has taken large premises in Broad Street, Bath, with a frontage also to Walcot Street. Mr. Wilcocks has now, therefore, fine show-rooms for his engines, boilers, and soda-water machinery. His old premises in Bick and Avon Streets he now utilises as a foundry and manufactory.

* *

MESSRS. WILSON & Co., of Stroud Green Road, Finsbury Park, have shown us some samples of an essence and syrup of ginger, from which the resin has been eliminated. The result is very similar to the product obtained by Mr. Hay, of Hull, already noticed in these pages. An essence of syrup is obtained of extremely fine flavour, and which will mix with water without losing its transparency.

* *

A NEW GLASS TABLET has been introduced by Mr. Abrahams, of 16 Elgin Road, W., which makes a most effective showcard for the window, or would serve admirably to fill up the sash of a window case or the frame of a shop-door. The tablets are of ruby, blue, or green glass, and the groundwork of the design is cut away, showing a white ground, leaving the coloured glass raised. With a light behind these transparencies have a very handsome appearance.

* *

EMERALDINE.—Messrs. Crawshaw & Co., of 15 Charterhouse Street, have introduced under this name one of the aniline colours which they wish to bring to the notice of chemists as a new show colour. Viewed by transmitted light, it is of a warm, transparent, yellowish brown tint; by reflected light it appears of a magnificent opaque green. We never remember to have seen a more striking exemplification of fluorescence. To obtain the best effects the liquid must be held in front of some dull, dark-coloured surface, so that the brilliant green reflected from the surface may not be interfered with by rays reflected through the liquid.

MESSRS. ALLEN PEANCE & Co., druggists' sundriesmen, of Bristol, who have taken up the old-established business of Pearce & Co., with which, however, the present partners had no connection, are pushing their trade in a spirited manner. They make feeding-bottles a leading line, and are supplying a good 6d. one with bent neck, and a 1s. box with extra bottle. They have sent us a few samples of some of their other goods, and we note as likely to be saleable their white ivory gun rings mounted on cards, fountain perfumes on cards, and several other kinds of goods in this style. Their 1d., 2d., and 6d. furniture polish we should say, too, looks like good value for money.

* *

MESSRS. HAYWARD, TYLER & Co. have just published a new "Explanatory Catalogue" of their machinery for the manufacture of aerated waters. The catalogue extends to ninety-six pages, and besides giving illustrations, descriptions, and prices of all the near and remote necessities of a soda-water plant, it contains some twenty pages of vigorously written and interesting literary matter, tracing the history of the inventions connected with the business, bringing the record pleasantly down from Dr. Priestley and Lavoisier to the Messrs. Howard, the present proprietors of the business of Hayward, Tyler & Co. Messrs. Hayward, Tyler & Co. claim with perfect truth that though they are old-established they are by no means old-fashioned. We are quite able to endorse this. The soda-water machinery makers are about the liveliest body of traders in England, and Hayward, Tyler & Co. are not the men to let their competitors go to sleep.



[The following list has been compiled expressly for THE CHEMIST AND DRUGGIST by G. F. Redfern, Patent Agent, successor to L. de Fontaine-moreau & Co., 4 South Street, Finsbury, London; and at Paris and Brussels.]

Provisional Protection for six months has been granted for the following:—

Aniline-red Residues.—No. 243.—C. D. Abel, of London. The treatment of the residues resulting from the manufacture of aniline red, for the production of valuable substances therefrom. Dated January 18, 1878.

Appliance for Corns, &c.—No. 625.—M. Wilson, of Leadenhall Street, London, merchant. An improved appliance for corns, bunions, abrasions, or protuberances. Dated February 14, 1877.

Battery Rheostats.—No. 492.—S. J. Coxeter, of Grafton Street East, London, surgical instrument maker. New or improved battery rheostats, especially applicable for medical purposes. Dated February 6, 1878.

Bottles, &c.—No. 512.—J. Brown, of Manchester. Improvements in bottles for containing aerated and other liquids, and in stoppering the same, also applicable for closing the mouth of jars and other similar receptacles. Dated February 7, 1878.

Carbonated Mineral Phosphates.—No. 120.—W. R. Lake, of London. Improvements in the treatment of carbonated mineral phosphates for agricultural and manufacturing purposes. Dated January 9, 1878.

Chemical Thermometers.—No. 317.—L. Peroni, of 45 Hatton Garden, Ffolborn, London, glass blower. Improvements in the construction and formation of glass tubes employed in the manufacture of thermometers, and in the manufacture of thermometers therefrom, which said tubes are more especially applicable to the manufacture of clinical, chemical, and other like thermometers. Dated January 24, 1878.

Cleaning Paint, &c.—No. 505.—H. P. Hayhoe, of Stowmarket, Suffolk. An improved preparation for cleaning paint, varnish or japan, and for removing paint, varnish, japan, or grease from wooden or other surfaces, or oxide or dirt from the surface of metals. Dated February 7, 1878.

Controlling Flow of Liquids from Cans, &c.—No. 491.—E. Werdnberg, of 14 Pickering Place, Bayswater, London. Improved means of controlling the flow of liquids from cans and other receptacles. Dated January 30, 1878.

Corking Bottles.—No. 652.—J. Schultz, of 19 Alter Steinweg, Hamburg. Improvements in machines for corking bottles. Dated February 16, 1878.

Cyanogen.—No. 311.—W. V. Wilson, of Jubilee Street, Mile End, London, colour manufacturer. Improvements in the manufacture of cyanogen products from gas residues. Dated January 24, 1878.

Dextrine and Glucose.—No. 456.—J. Johnson, of 3 Elm Villas, Cedar Road, Stratford, Essex. Improvements in the manufacture of dextrine and glucose, and in the apparatus employed therefor. Dated February 4, 1878.

Disintegrating and Mixing Substances.—No. 325.—H. Simon, of 7 St. Peter's Square, Manchester. Improvements in apparatus for disintegrating and mixing substances. Dated January 24, 1878.

Distilling Greasy Bodies.—No. 507.—P. Nicolai, of 22 Rue de Trévise, Paris. Improvements in the apparatus for distilling and rectifying greasy bodies. Dated February 7, 1878.

Distributing Beverages.—No. 506.—R. H. Corréard, of 23 Boulevard de Stasbourg, Paris. Improvements in vessels or receivers for distributing beverages or liquids in general. Dated February 7, 1878.

Effervescent Beverages.—No. 530.—A. Harrison, of Fenge, Surrey, analytical chemist. Improvements in the preparation of effervescent beverages. Dated February 8, 1878.

Evaporating Saccharine Juices.—No. 301.—W. Morgan-Brown, of London. Improvements in the method of and in the apparatus for continuously evaporating cane and other saccharine juices, solutions of salt, and other liquids increasing in density by evaporation. Dated January 23, 1878.

Feed-Cake for Cattle.—No. 116.—H. Hodge, of 6 High Street, Hull, Yorkshire, seed crusher. An improved feed-cake for cattle. Dated January 9, 1878.

Filter Presses.—No. 376.—F. L. H. Danchell, of Osney Crescent, Camden Town, London. Improvements in filter-presses. Dated January 29, 1878.

Filtering Water.—No. 363.—A. M. Clark, of London. Improvements in and connected with apparatus for filtering water. Dated January 28, 1878.

Measuring Liquids.—No. 495.—J. R. Johnson, of 39 Rue Borghé, Neuilly-sur-Seine, France. Improvements in means or apparatus for measuring liquids. Dated February 6, 1878.

Medical Galvanic Apparatus.—No. 324.—B. Scarles, of 308 East Road, London. Improvements in medical galvanic apparatus applicable to the human body. Dated January 24, 1878.

Oil Receptacles.—No. 458.—W. Taylor, of Liverpool. Improvements in the construction or manufacture of receptacles for the carriage of oil and other liquids. Dated February 4, 1878.

Preserving Eggs.—No. 395.—R. Gerstl, of 7 Clifton Villas, Camden Square, London, scientific chemist. Improvements in the preservation of eggs. Dated January 30, 1878.

Preserving Food.—No. 478.—J. L. Sund, of 4 Great Winchester Street, London. Improvements in the preservation of articles of food, and in apparatus therefor. Dated February 5, 1878.

Preserving Vegetable Matters.—No. 3995.—C. P. Poucier, chemist of Maisons Laftite, France. Improvements in the method of preserving animal, vegetable, and organic matters by aid of borate of alumina. Dated October 29, 1877.

Production of Sulphur from Pyrites.—No. 500.—J. Holloway, of 1 Jeffrey's Square, London. Improvements in the production of sulphur from pyrites, and in the means employed therefor. Dated February 6, 1878.

Recovering Gums, Acids, &c.—No. 432.—H. Gardner, of London. A process of recovering gums, oils, fats, salts, acids, and other like matters which impregnate threads or textile fabrics of all kinds. Dated February 1, 1877.

Recovery of Arsenic.—No. 519.—A. S. L. Leonhardt, of Malakau, Germany, chemical manufacturer. An improved process and apparatus for the extraction and recovery of arsenic from the residue obtained in the manufacture of magenta colour. Dated February 8, 1878.

Refining and Decolourising Oils, &c.—No. 372.—F. L. H. Danchell, of Osney Crescent, Camden Town, London. Improvements in the method of refining and decolourising oils, spirits, and syrups. Dated January 29, 1878.

Refrigerators.—No. 715.—A. M. Clark, of London. Improvements in Refrigerators. Dated February 20, 1878.

Saccharification of Amylaceous Matter.—No. 617.—A. M. Clark, of London. Improvements in the saccharification of amylaceous matter. Dated February 15, 1878.

Separating Vapours from Gases.—No. 643.—S. Pitt, of Sutton, Surrey. Improvements in the separation of vapours or volatile bodies from gases or other vapours with which they may be admixed. Dated February 15, 1878.

Soda and Potass.—No. 356.—G. W. von Nawrocki, of Berlin, Germany. Improvements in the manufacture of soda and potass from the sulphates of soda and potass, and in obtaining sulphurous acid therefrom. Dated January 23, 1878.

Stoppering Bottles.—No. 620.—G. Richards, of Paris. An improved apparatus for stoppering bottles. Dated February 14, 1878.

Syrups, Mineral Waters, &c.—No. 551.—A. Clark, of Frith Street, Soho, London. Improvements in syrups, mineral waters, and other beverages. Dated February 9, 1878.

Treating Sewage, &c.—No. 511.—H. Baggeley, of Kensington, London, chemist. Improvements in the treatment of sewage, and in the manufacture of manure therefrom, also in the apparatus or means to be employed therein, partly applicable to the treatment of noxious vapours from chemical and other works. Dated February 7, 1878.

Letters Patent have been issued for the following :—

Bin Case.—No. 3281. A. J. Arenell, of Mansell Street, London, trunk and packing case manufacturer. An improved bin case. Dated August 29, 1877.

Stoppers.—No. 4943.—L. Rose, of 11 Curtain Road, Finsbury, lime juice merchant. An improvement or improvements in the manufacture of stoppers for bottles for containing aerated or gaseous liquids. Dated October 31, 1878.

Treating Fermented Liquors.—No. 3275.—T. J. and J. G. Chapman, both of 10 Priory Street, Birkenhead, Cheshire. Improvements in or relating to bottling or stoppering barm, beer, and other fermented liquors, and in the stoppers applicable for this and other kindred purposes. Dated August 28, 1877.

Food.—No. 3117.—F. Irwin, of Newcastle-on-Tyne, engineer. Improvements in utilising certain residuary farinaceous substances, and in converting the same into food for cattle. Dated August 16, 1877.

Processing Organic Matter and Sewage.—No. 3395.—B. B. Standen, of Bradford, Yorkshire, manufacturing chemist. Improvements in the treatment of human excrement, both solid and liquid, and in the deodorising organic matter, and in the means or apparatus employed therein; part of such means and apparatus may be employed for treating sewage matter, and filtering and deodorising sewage and other water. Dated September 16, 1877.

Treating Oils.—No. 3521.—G. Hadfield, of Manchester. Improvements in the method of and apparatus for treating drying oils and varnishes. Dated September 19, 1877.

Electric Piles.—No. 4500.—G. A. Schoth, of Euston Road, London. Improvements in electric piles, applicable to medical, telegraphic, and other purposes. Dated November 29, 1877.

Extraction of Alcohol, &c., from Locust Beans.—No. 3331.—H. Garth, of 7 North Parade, Beverley Road, Kingston-upon-Hull, and 11 Clement's Lane, London, civil engineer, and J. Ostler, of 21 High Street, Kingston-upon-Hull, merchant. The preparation and extraction of alcohol, ether, fusel oil, and acetic and other acids, from locust beans and locust meal, and a novel medium for filtering liquids produced or used in the above process. Dated September 1, 1877.

Fruit Salts.—No. 4270. J. N. Fleming, of Newcastle-on-Tyne, Northumberland, doctor of medicine. Improvements in apparatus adapted to be employed in the manufacture of fruit salts, partly applicable in the drying of other matters. Dated November 15, 1877.

Galvanic Batteries.—No. 2997.—J. & S. J. Coxeter, of Grafton Street East, London, surgical instrument makers. Improvements in galvanic batteries, specially useful for medical purposes. Dated August 7, 1877.

Improved Bedsteads.—No. 4183.—J. Reynolds, of Worcester. Improved apparatus to be applied to bedsteads for raising and supporting the occupant. Dated November 9, 1877.

Preserving Animal and Vegetable Substances.—No. 3373.—E. P. H. Vaughan, F.C.S., of London. Improvements in the method of and in apparatus for preserving animal and vegetable substances. Dated September 5, 1877.

Purifying Coal Gas.—No. 3980.—J. Von Quaglio, chief engineer of the Stockholm Gas Works, Sweden. Improvements in purifying coal gas from bisulphide of carbon and other sulphur compounds. Dated October 27, 1877.

Purifying Gas.—No. 4928.—T. N. Birkham, of Abingdon Street, Westminster, London, D. Hulett, of High Holborn, London, S. Chandler, sen., and S. Chandler, jun., both of Newington Causeway, London. Improvements in apparatus for condensing, washing, and purifying gas and other vapours. Dated December 29, 1877.

Refrigerating.—No. 3108.—P. Giffard, of Boulevard Saint Denis, Paris, engineer. Improvements in machinery or apparatus for the artificial production of cold for ice-making and other purposes. Dated August 15, 1877.

Salicylic Acid.—No. 4094.—M. Neustadt, of Mineing Lane, London, merchant. Improvements in the manufacture and production of salicylic acid, and in apparatus employed therein. Dated November 3, 1877.

Self-Venting Taps.—No. 3303.—J. S. Nukoll, of 176 Commercial Road. Improvements in self-venting taps and in self-acting means and appliances for preventing the entrance of air into casks and other vessels, after the removal therefrom of the taps or cocks used to draw off the contents thereof. Dated August 30, 1878.

Stoppering Bottles, &c.—No. 3027.—J. and J. E. Carter, both of 13 Clarence Street, Halifax, Yorkshire. New or improved appliances for stoppering bottles, flasks, or jars. Dated August 9, 1877.

Stoppering Bottles.—No. 2967.—J. D. McBane, of Forest Road, Dalston, London, cellarman. Improvements in securing stoppers in bottles and other similar receptacles. Dated August 2, 1877.

Tartaric Acids and Salts.—No. 3115.—F. Wirth, of Frankfort-on-the-Maine, Germany. Improvements in the treatment of the residues of wine for manufacturing tartaric acid and tartaric salt. Dated August 15, 1877.

Treating Sewage.—No. 2725.—J. Hanson, of Saville Town, near Dewsbury, Yorkshire, manufacturing chemist. Improvements in treating sewage and other foul water by the use of liquids only; also an improved method of treating sewage and foul water by the use of solid ingredients combined with liquids; and improvements in softening clarified and hard water. Dated July 16, 1877.

Utilising Gas Liquor.—No. 2842.—R. W. Wallace and C. F. Claus, both of the Chemical Works, Southall, London. An improved process for utilising gas liquor in the manufacture of carbonate of potash and other salts, and sulphuric acid, and in apparatus therefor, which apparatus is also applicable for other like purposes. Dated July 25, 1877.

Violet Colour.—No. 2614.—W. R. Lake, of London. Improvements in the manufacture of violet colour. Dated July 6, 1877.

Voltaic Medicated Plaster.—No. 4706.—W. R. Lake, of London. An improved voltaic medicated plaster. Dated December 11, 1877.

Washing Bottles.—No. 2540.—J. S. Clarke, of the Corn Market, Derby. Machines for washing and soaking bottles and other articles. Dated July 2, 1877.

Weighing Grain, Chemicals, &c.—No. 2637.—G. W. von Nawrocki, of Berlin. Improvements in self-acting weighing machines for weighing grain and powder-like materials, such as corn, linseed, rice, coffee, chemicals, plaster of Paris, cement, and the like. Dated July 10, 1877.

Specifications published during the month :—

Postage 1d. each extra.

1877.

1755. G. Walker. Paint oils. 2d.

1820. C. Eskrett and W. H. Searle. Wrappers or envelopes for oil presses. 2d.

2015. C. Trapnell. Apparatus for raising and supporting invalids. 8d.

2083. H. Sandeman. Cask sampler. 2d.

2088. F. Foster. Capsules or stoppers for bottles. 6d.

2106. J. H. W. Biggs. Apparatus for the manufacture of common salt and carbonate of soda, and for packing salt, &c. 1s. 10d.

2144. G. C. Gould. Taps and casks. 2d.

2183. M. K. G. Lieber. Manufacture of soda and potash. 2d.

2189. H. Ridley. Self-acting apparatus for drawing off fluids. 2d.

2194. S. W. M. De Sussex and L. A. Brassenr. Galvanic batteries. 1s. 2d.

2202. E. Yates. Tins or canisters for oils, paints, &c. 2d.

2235. J. B. Moore. Medicinal cooling draught, &c. 2d.

2247. T. Bond. Antiseptics and disinfectants. 2d.

2257. A. C. Collinenn and M. E. Savigny. Process of greenening preserved vegetables, &c. 4d.

2270. W. Morgan-Brown. Preserving animal food in a fresh state. 2d.

2276. B. J. B. Mills. Refrigerating apparatus. 4d.
 2278. H. Hampson. Stoppering bottles. 2d.
 2288. J. Holden, S. Turton, and J. Barber. Receptacles for acids, &c. 2d.
 2301. W. Cotton. Stoppering bottles. 6d.
 2321. A. C. Jeffrey. Refrigerators. 2d.
 2327. W. Black and D. Hill. Manufacture of sulphates of soda and potash. 6d.
 2361. C. Warner and W. Tully. Stoppers for bottles. 8d.
 2362. R. W. Wallace and C. F. Claus. Purification of gas, &c. 4d.
 2364. W. T. Read. Cooling liquor contained in bottles. 2d.
 2368. H. Hampson. Stoppers for bottles. 4d.
 2376. R. J. Smith. Stoppering bottles. 6d.
 2476. R. W. Wallace and O. F. Claus. Purification of gas, &c. 4d.
 2481. W. Jones and J. Walsh. Apparatus for the manufacture of sulphates of soda and potash, &c. 6d.
 2514. N. Thompson. Stoppers for bottles, jars, &c. 2d.
 2524. F. Wirth. Purifying water. 2d.
 2545. E. Johnson and J. Robey. Treating sewage sludge. 2d.
 2557. W. W. Horner and G. Barker. Apparatus for filling bottles with aerated and other liquids. 6d.
 2564. S. Gee and G. Gibbs. Necks of bottles, jars, &c. 2d.
 2579. P. and F. M. Spence. Manufacture of alum, &c. 6d.
 2591. A. Henrique. Stoppering bottles, &c. 2d.
 2594. H. McDrummond and W. J. A. Donald. Manufacture of chromates. 2d.
 2602. W. R. Lake. Manufacture of red colour. 2d.
 2610. I. Pearson. Oil presses. 6d.
 2612. P. and F. M. Spence. Manufacture of alum. 2d.
 2614. W. R. Lake. Violet colour. 4d.
 2635. F. B. Doering. Medicated wools, &c. 2d.
 2655. R. Dixon. Disinfecting dry soap. 2d.
 2662. W. R. Lake. Treating mineral phosphates for agricultural and other purposes. 4d.
 2663. Mary Welton. Preserving meat. 2d.
 2697. W. R. Lake. Apparatus for purifying ozone. 6d.
 2744. R. Marston. Dental appliances. 6d.



BANKRUPTS.

- HEATON, LUTHER, Union Street, Dewsbury, manufacturing chemist. March 7.
 ROBINS, THOMAS, Whalley Road, Acerington, herbalist. March 2.

LIQUIDATIONS BY ARRANGEMENT OR COMPOSITION.

Notices of first meetings of creditors have been issued in re the following estates. The dates are those of the "London Gazette" in which the notices first appeared.

- BUXTON, DICK HADLOW, trading as D. H. Buxton & Co., Mary Street, South Lambeth, and Cowley Road, North Brixton, manufacturing perfumer. February 9.
 C'APPERATA, PHILIP, 32 Frederick Street, Sunderland, dentist. Feb. 6.
 MCKANE, GEORGE OLIPHANT, Byers Green Hall, near Speunymoor, surgeon and physician. February 6.
 TAYLOR, HENRY, jun., Fordecombe, Penshurst, Kent, grocer, draper, and druggist. January 30.
 COVENEY, JAMES, Colebester, mineral water manufacturer. February 18.
 KAHN, THOMAS, Coleshill Street, Birmingham, chemist. February 14.
 OCLER, FREDERICK HENRY, 140 Great Jackson Street, and Gorse Street, both Hulme, surgeon dentist. February 9.
 PEARSON, JAMES FREDERICK, Prudhoe, Northumberland, surgeon's assistant. February 11.
 SMITH, WILLIAM TOWERS, 21 Upper Phillimore Place, Kensington, surgeon. Jan. 29.
 WALKER, GEORGE STEPHEN, Cavendish House, Shoot-up-Hill, Kilburn, surgeon. February 15.
 WALKER, ALEXANDER, 95 Stockwell Park Road, late 394 Brixton Road, surgeon. February 15.
 SMITH, WILLIAM TOWERS, Upper Phillimore Place, Kensington, physician and surgeon. March 2.

DIVIDENDS.

- KANNARD, DAVID, sen. (Bkt.), Lamborne, Berks, surgeon. 1st div. 2s. 5½d.; Wednesday next and two subsequent Wednesdays between 11 and 2.
 P. Paget, Bankruptcy Court, Lincoln's Inn Fields.

WILKINSON, GEORGE WILLIAM (insolvent), Lansdown Road, Notting Hill, surgical instrument maker. 1st div. 5s. 4d.; any Tuesday between 1 and 2. Provisional Assignee's Office, Portugal Street, Lincoln's Inn.
 TAYLOR, JOHN (Liq.), Thornton Heath, Surrey, late Wakefield, York, chemist. 1st and final div. 1s. 3d. J. J. W. Bennett, 54 Moorgate Street.
 KITCHEN, WILLIAM (Liq.), Kendal, Westmoreland, chemist. 1st and final div. 2s.; any Monday between 3 and 4. W. Heatou, Old Town Hall Chambers, Kendal.

PARTNERSHIPS DISSOLVED.

LITTLE & Co., High Street, Redear, Yorks, chemists and wine merchants. February 1. Debts by Charles P. Heyland.
 LOCKYER, GEORGE, & SONS, 21 Mining Lane, London, merchants, and St. Philip's Marsh, Bristol, chemical manufacturers. January 25.
 NOYERRE & BUTT, Park Street, Grosvenor Square, surgeons. Dec. 31.
 SHORTHOUSE, JOSEPH & SONS, Birmingham, chemists and lacquer manufacturers. January 1. As concerns Joseph Shorthouse.
 SMITH & CLARKE, Lincoln, manufacturers of cough medicine and pills. January 10.
 STRAZAKER & HAIGH, Lindley, near Huddersfield, dry soap makers and chemical manufacturers. January 28. Debts by George Haigh, jun.
 BELL & CAH, Newcastle-upon-Tyne, chemical manufacturers.
 DAVIES & MUIR, Morriston, near Swansea, surgeons.
 HOLLANDS & DAVIES, Clengall Road, manufacturing chemists.
 RUEB, RUEB & Co., Goldhawk Road, Shepherd's Bush, crucible manufacturers.
 SLATER & FALVEY, Caledonian Road, surgeons.
 STANDEN & KOPPEL, Bradford, chemist.

SCOTCH SEQUESTRATION.

GLASTERLAW MANURE CO., Glasterlaw, Forfarshire, chemical manufacturers. February 5. Debts by Jno. Stenhouse, who continues the business.

Obituary.

YARRINGTON.—February 24, 1878, Mr. Peter Carter Yarrington, chemist and druggist, East Dereham, Norfolk. Aged 34 years.
 SERVICE.—February 26, 1878, Mr. Charles Service, chemist and druggist, South Lambeth Road. Aged 76 years.
 COLTON.—February 23, 1878, Mr. Thomas Colton, pharmaceutical chemist, Ousegate, Selby, Yorkshire. Aged 72 years.
 LACEY.—February 24, 1878, Mr. Samuel Lacey, chemist and druggist, Vassall Road, Brixton. Aged 35 years.
 HARVEY.—February 1, 1878, Mr. John Harvey, chemist and druggist, Newark. Aged 57 years.
 COOK.—February 18, 1878, Mr. Thomas Cook, chemist and druggist, Northgate Street, Gloucester. Aged 65 years.
 SAGAR.—April 6, 1877, Mr. Stephen Carr Sagar, chemist and druggist, Swinton, Lancashire.
 FERGUSON.—January 9, 1878, Mr. John Fergusson, pharmaceutical chemist, Strand Street, Liverpool. Aged 63 years.
 JONES.—January 20, 1878, Mr. Richard Lewis Jones, chemist and druggist, Newport, Monmouthshire. Aged 38 years.
 MITCHELL.—January 21, 1878, Mr. William Mitchell, chemist and druggist, Newcastle Street, Strand. Aged 60 years.
 NIXON.—January 22, 1878, Mr. Joseph Nixon, chemist and druggist, Bowdon, Cheshire. Aged 31 years.
 PROCTER.—January 23, 1878, Mr. Joseph Procter, pharmaceutical chemist, Taunton. Aged 54 years.
 WELLSRING.—February 2, 1878, Mr. John Wellspring, chemist and druggist, Chandos Street, Strand. Aged 74 years.
 MARSHALL.—February 1, 1878, Mr. James Ainsworth Marshall, pharmaceutical chemist, Waltham Abbey. Aged 66 years.
 PRICE.—February 5, 1878, Mr. Samuel Cormel Price, chemist and druggist, West Bromwich. Aged 74 years.
 DALTON.—February 9, 1878, Mr. John Robert Dalton, chemist and druggist, Stamford, Lincolnshire. Aged 38 years.
 EMBLEY.—February 9, 1878, Mr. John Embley, chemist and druggist, Brilfield, Lancashire. Aged 33 years.
 HALDANE.—February 10, 1878, Mr. George Haldane, chemist and druggist, Wakefield. Aged 52 years.
 SIM.—February 14, 1878, Mr. James Sim, pharmaceutical chemist, King Street, Aberdeen. Aged 75 years.
 RYDE.—February 15, 1878, Mr. William Henry Ryde, chemist and druggist, Penge. Aged 37 years.
 SPAR.—February 17, 1878, Mr. Robert Spar, pharmaceutical chemist, Okeotham, Manchester. Aged 122 years.

EXCHANGE COLUMN.

TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of THE CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to the "Publisher of THE CHEMIST AND DRUGGIST, Colonial Buildings, Cannon Street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

FOR DISPOSAL.

Bottling machine, in use two months. Bordass, Driffild.

Pharmaceutical Journal, posted the same day as received. 16/158.

Pharmaceutical Latin Grammar, perfectly new, cheap. Kay, Stainland.

Leeming's essence, clean, carriage paid, 13s. Fortune, Chemist, Anstruther.

Glass show-case. Particulars from Thomas Slater, Stone, Staffordshire.

Pounds of lavender. Mitcham. 1874; one ounce trychnine. Brown, Chemist, Dover.

Baker's patent sifting and mixing machine, with four sieves. Cash, 12s. 9/155.

Dr. T. S. "Cyclopaedia," by Tuson, 5th edition, quite new, cost 28s. What offers? 156/19.

Sam's 42s. student's chemical cabinet complete, new, 25s.; 140 *Pharmaceutical Journals*, 875-7, 10s. 15/157.

Wanted for THE CHEMIST AND DRUGGIST for the last nine years. Gifford, Sinton Bridge, Lincolnshire.

Pharmaceutical Journal from the commencement. H. Roberts, 3 Cedars Terrace, Edith Road, West Kensington.

Mercurium, over 180 specimens, cheap, 10s. 6d.; also Fownes' "Chemistry," 9th edition, 5s. Arthur, 35 High Street, Crediton.

Dr. S. S. "Companion," eighth and eleventh editions; Proctor's "Pharmacy," new. Offers wanted, or will exchange. 8/155.

"Full Course of 152 Lectures for the Minor Examinations" lent to copy for 8s. Thomas Archey, 81 Coburg Street, Leeds.

Better, or less, 1874, ol. lavender. Mitcham, cash offers or exchange, for bent plate case, about 5 feet long. J. Ettles, Elgin.

Dr. S. S. "Chemistry," 4th edition; Barber's "Companion," 7th edition, good as now; what offers? F. W., 176 Hoxton Street.

American eight-day dial, in good going order, strikes the hours, would suit shop or hall; price 30s. J. G., 10 Queen's Road, Brighton. Questions asked (with prescriptions given or dispense) at last Edinburgh or London Minor, 2s. Saunders, 79, Gaisford Street, N.W.

A sponge case, as fig. 92; Maw's universal show-case, cost 35s., both in capital condition; what offers? Longley, North Street, Leeds.

Second-hand beam-action machine, by Messrs. Hayward, Tyler & Co., for sale, a bargain. For particulars apply to N. G. Wilcocks, 19 Broad Street, Bath.

Oil vats, in very good condition; largest, 2 feet high, 2 feet 10 inches in diameter; smallest, 3 feet high, 2 feet 2 inches in diameter. 30/154.

Measuring scales and weights, as fig. 7, Maw's list, brass pans; price 15s., or exchange for Hancock's mixing machine. Hartill, Chemist, Osceville, Bliton.

Pharmaceutical Journal, from 1853 to 1870, unbound; offers wanted. W. B., Wallgate, Wigan.

A bargain. Muter's "Chemistry," latest edition, and *Materia Medica*, nearly new; price 15s. the two. 52/178.

Two 1-gallon percolators, graduated; highest cash offers accepted, cost 33s. 6d. each. 37/156.

Iron mortar and pestle, perfect condition, diameter 15 inches, height 12 inches; exchange for large marble mortar, or offers. Roger-son, Chemist, Bradford.

Muter's "Chemistry and *Materia Medica*," last edition, published at 20s, price 10s., free to wholesale house. J. Haywood, 10 Prince's Row, Palace Road, S.W.

A gold chronograph, registering quarter-seconds, by French, Royal Exchange, London, in perfect order; price 20l., cost about 40l. J. G., 10 Queen's Road, Brighton.

14 lbs. commercial iodine, 20 lbs. potassii iodide, 2 lbs. Mitcham oil of lavender, 25 ozs. Holstein's virgin otto, best; what offers? Apply, J. W. Bodger, Peterborough.

Twenty-three years' *Pharmaceutical Journals*, unbound, clean, good condition, price 3l. 3s. the lot, or would exchange. Address George Pearson, Chemist, Kingswinford, Dudley.

A quantity of useful utensils, bottles, carboys, specic jars, fancy jars, ointment jars, mortars, spatulas, cigar case, tincture press, drawers, plate glass, silvered glass, leech aquarium, &c. E. Natali, 213 Old Street, E.C.

Cheap, several fire-clay muffles; also twelve 6d., 2s. 6d.; twelve 1s. Mather's marking ink, 6s.; twelve 13½d., 7s. 6d., six 7½d., 2s. 3d.; six 2s. 9d. Stanton's pills, 9s. 6d., six 2s. 9d. Bardsley's 9s. 6d., clean, saleable. Wright, Dentist, Burnley.

A first-rate dental chair, old-fashioned, but good, 90s.; a ditto, modern, with shifting back and patent head-rest, green velvet cover, as good as new, cost 16l., price 8l. 10s.; also an Edwards' economic gas apparatus, in box, 45s. E. Natali, 213 Old Street, E.C.

Second-hand cylindrical boiler, with all mountings and dial and water gauges, 10 feet 6 long by 2 feet diameter, with new horizontal steam engine, 3½ diameter cylinder by 7 inch stroke, together 30l. Further particulars of N. G. Wilcocks, 19 Broad Street, Bath.

Handsome bent plate-glass tooth, mill, and hair brush case, 2 feet long, 2 feet wide, with 3 plate-glass shelves, polished edges, 2 velvet-lined trays, and 2 mirrors—glass doors, cost 7 guineas, price 3 guineas, bargain. Memo, 110 Cheltenham Road, Bristol.

Butcher's 3l. 3s. homoeopathic case, containing 64 1s. and 18 6d. articles, quite new, 35s., cheap; mahogany flat counter case (plate), 36 inches by 14, 15s.; first-class cough-drop machine, with excellent recipe, 25s. 6d., cheap. Appleton, Bolsover. (Stamp for reply.)

Dow's Clark's iced cream, soda-water apparatus, also copper cylinder, everything in good working order. Read, 2 Market Terrace, Upper Holloway.

To Minor Students.—In excellent condition, Southall's *Materia Medica* Cabinet; Southall's "Organic *Materia Medica*," containing many valuable private notes; Griffiths's "Pharmacopoeia Notes;" and Roscoe's "Chemistry," for 25s. Heaton, Little Hulton, Lancs.

The fixtures of a chemist's shop, consisting of five nests of drawers with mahogany fronts and labels in black on gold ground, cupboards below, with sliding doors, and shelves above, in excellent condition, height 9 feet. For particulars apply to Mr. Winfield, 31 Queen Street, Derby.

Five pounds; 8½-inch plate electrical machine, with large Leyden jars, thunder-house, discharge rods, bells, orary, mortar, and various apparatus for experiments, in handsome brass-bound mahogany box, 24 inches by 18 inches by 12 inches, worth 10l. John Knight, 91 City Road.

Two specic jars, gilt covers, 24 inches to top of cover, Maw, figs. 19 and 20; cash offers; 1½ oz. potassium, 7s. 6d.; *Pharmaceutical Journal*, from November, 1875, to February, 1878, five numbers missing; Gray's "Supplement," 1847 edition; Reece's "Medical Guide." Hambridge, Chemist, Highworth, Wilts.

Twenty 12 lb. coppers, new super-essence lemon, 7s. 9d. lb.; ol. menth. pip. Hotchkiss, 11s. 6d. lb.; flor. anthem opt., 10½d.; Jamaica honey, 48s. cwt.; cupri sulph. opt., 24s.; acid acetic B.P., 28s.; burnt sugar, 40s.; 10 cases finest seconds castor oil, 5½d.; finest pale oak varnish, 6s. 6d. Sowerby, Middlesborough.

Soda-water machine, with Bramah pump, eight-gallon cylinder, dial and water gauges, generator, gasometer, bottling rack, horizontal engine and vertical boiler, all complete, in working order, to make about 1,000 dozen per day; price 75l., cash, at Bath. Full particulars on application to N. G. Wilcocks, 19 Broad Street, Bath.

To Minor Students.—An herbarium of over 100 plants, representing all the important natural orders, and illustrating all the salient points in structural botany, invaluable to study side by side with the text-book, 7s. 6d., carriage paid; smaller do., 3s. 6d.; Southall's, 30s. *Materia Medica* Cabinet, 20s. J. Tully, Chemist, Tunbridge Wells.

Handsome half-inch wrought-iron scroll stand, supporting three circles for two-gallon show colours, each circle pierced for eighteen lustres, height 60 inches, width 24 inches, cost 42s., price 20s., sketch free; also three two-gallon pear-shape show carboys, with cut spiral stoppers, elegant shapes, and alike; the three for 20s. Edward Muish, Chemist, Cotnam Brow, Bristol.

Pindar's rotary pill machine and piping press, separated rollers, and plates to pipe 2, 3, 4, and 5 grain pills, scarcely soiled, 25 per cent. under list price; quinine, opium, &c., &c.; part exchange. London. 11/158.

Cheap.—3 cwt. gum acacie, 7 lbs. rass santal-rub, 1 cwt. luc. sulph., 1 doz. Cooper's "Foot-rot," 1½ doz. Williams's worm lozenges, qty. Rackham's dog medicines, James's blistering ointment, Cuff's mange oil, Marson's collodion. McMaster's anti-smut powder, Cupiss's constitution balls, Roger's vermin killer, &c. For particulars, enclose stamp to Harrison, Chemist, Trannemere, Cheshire.

Offers wanted for all or separate articles:—9 doz. white shop jars and covers, height, 4 in., diameter, 2½ in.; 6 gross ½-oz. white vials, squats; clean dispensing screen, ground starred glass, mahogany frame, 32 in. long by 14 deep and 25½ high; sheet of ruby glass, mahogany frame, with "Dentistry" on in gold letters, 20 in. by 38½ in. Apply, Field, 3 Victoria Buildings, Pimlico, S.W.

Nests of drawers, window enclosures, glazed cases, shop jars, all sizes and colours, show bottles, specic jars, black store bottles, shelving, and other requisites, together or separately; also tobacconist's handsome show cases, jars, &c.; a capital Wheeler & Wilson's sewing machine, price 2l. 10s.; also a handsome vase of satin flowers, price 3l. 10s. Apply, 294 Old Kent Road.

Plate-glass counter cases of every size and description, also the following, all plated glass, and equal to new:—A 6 ft., as 105, 7l.; a 5 ft., ditto ditto, 6l.; a 6 ft., as fig. 99, 6l. 10s.; a 3 ft. 8, as fig. 100, 75s.; a 3 ft. 6, ditto ditto, 75s.; a 3 ft. 6, as fig. 101, 75s.; a 6 ft., as 104, 6l.; a 5 ft. 9 in, as 96, 5l.; a 3 ft. 6 in., as fig. 16, 45s.; a 3 ft., ditto, 40s.; several, as fig. 7, from 30s. each. E. Natali, 213 Old Street, E.C.

A 7-ft. dispensing screen, glass case at each end, with looking-glass centre, marble slab in front, looking-glass backs to cases, handsome tablets and fretwork on top, "Dispensing Department," 8l. 10s.; sponge case, as 92, 5l.; a ditto, as fig. 90, 90s.; desk and case, as fig. 21, 65s.; as fig. 39, 45s.; a desk and case, 40s.; 4-ft. dispensing screen, 50s.; 6-ft. dispensing screen, as 165, 7l.; 7 ft. ditto, 7l. 10s. E. Natali, 213 Old Street, E.C.

A 4-ft. glass case, to stand on floor, 3 ft. high, 12 in. deep, marble top, 4l. 10s.; a 3 ft. 6 upright glass case, as 163, 50s.; a very handsome plate-glass counter case, 5 ft. 6 in. long, 19 in. wide, 12 in. high, one sheet of glass silvered glass back, glass ends, equal to new, 6l. 10s., worth double; a ditto 4 ft. 2 in. long, 20 in. wide, 15 in. deep, with plate-glass shelf, with polished edge inside case, 6l. E. Natali, 213 Old Street, E.C.

Post free, P.B., 1867, and supplement, 6s.; Rec's "Analysis—Blood and Urine," 2s. 6d., published 7s. 6d.; "Nomenclature of Diseases," R.C.P., 2s. 6d.; Phillips' "Translation, P.L.," 3s.; Smith's "Human Intestinal Worms," illustrated, 3s. 6d.; Holme's "Coote's Syphilis," 3s.; Clarke's "Young Mother's Medical Assistant," 3s.; "Bell on Teeth," plates, 6s., published 14s.; Lee's "Ovarian and Uterine Diseases," 3s. M. Percy, 12 James Street, Haymarket.

Faraday's "Chemical Manipulation," scarce, newly bound, 12s. 6d.; Quain's "Anatomy," 7th edition, 2 vols., 800 engravings, fine copy, 16s., cost 31s. 6d.; Carpenter's "Microscope," 6s. 6d., published 12s. 6d.; Chaptal's "Chemistry Applied to Arts and Manufactures," seven handsomely bound volumes, 10s.; Graham's "Application of Chemistry to the Arts," 6s., published 26s.; Miller's "Inorganic Chemistry," 7s., published 21s. M. Percy, 12 James Street, Haymarket, S.W.

Thomson's "London Dispensary," 4s.; Ballard Garrod's "Materia Medica," 3s. 6d.; "Chemistry," edited by Liebig, 6s. (published 21s.); Barker Montgomery's "Dublin Pharmacopoeia," 3s.; Parnell's "Chemical Analysis, Organic and Inorganic," 2s. 6d. (published 9s.); "Works on Chemistry," Liebig's, Turner's, Gregory's, Kane's, Watson's, together published 3l. 14s. 6d., 10s.; "Orfila's Poisons," translated, 2 vols. (30s.), 5s.; 13 plumbago and other crucibles, lot 4s. 6d. Letters, H. Preston, 21 Clarendon Square, (London), N.W.

The first-rate fittings of a chemist's shop cabinet, 13 ft. 6 long, 9 ft. high, containing mahogany drawers, with lockers under, shelving and cornice over, the drawers are newly labelled, and glass knobs; also 6 ft. 4 nest of drawers to match; 130 ft. mahogany-fronted shelving and cornice, 12 ft. mahogany top counter; 5 ft 6 in. mahogany counter, with dispensing screen on top, very handsome; a 6 ft. 4 in. mahogany eupboard, with marble top; desk and glass case in front, counter case, tooth brush case, specic jars, carboys, ointment jars, &c. &c., very cheap, to be sold together or separate. E. Natali, 213 Old Street, E.C.

The entire fittings of three chemists' shops for disposal at 35l., 42l., 62l. 10s. each; two bent glass, nearly new, mahogany counter cases, each 2 ft. 1 long, 20s. each; two 2 ft. 6 long ditto, 25s. each; one 3 ft. long ditto, 30s.; one 4 ft. long ditto, 45s.; two 6 ft. long ditto, 90s. each; Maw's fig. 3 case equal to new, 130s.; two 5 ft. 4 long 2 ft. 2 wide flat plate-glass mahogany counter cases, 40s. each; two 4 feet 6 long ditto, 35s. each; upright case and desk, 50s.; ditto, 70s.; sponge cases, as fig. 90 and 92 Maw's, 75s. 95s. each; tooth-brush case, as 72 Maw's; 2 ft. 6 long 18 in. high upright counter case, 25s.; 2 ft. 4 long 4 ft. high upright show case, 40s.; quantity mahogany top counters, wall cases, window enclosures nests gold-labelled shop drawers, shelving, dispensing screens, &c.; 38 pear-shape window show carboys from 3s. each; upright show bottles, from 1s. each; new 20 and 30 oz. stoppd. shop rounds, 8s. 3d. and 11s. 3d. per dozen. Lloyd Rayan, 333 Kingsland Road, London, N.

FORMULÆ.

200 veterinary recipes, 7s. 6d.; splendid recipe for syrup of sennae, 5d. lb., 4s. 13/157.

An excellent permanent non-corrosive finest blue-black writing-ink; recipe, 10s. 6d. 13/158.

Compound by which a factory extending over two acres was cleared of rats in one night; recipe, 10s. 6d. Walker, 13 Annfield Row, Dundee.

Transparent Glycerine Jelly, Fragrant Liquid Dentrifrice, Furniture Cream, Baking Powder; all excellent recipes, 2s. each, give entire satisfaction. North, Chemist, 5 Napier Terrace, Exeter.

Superior Lavender Water, Ylang-ylang, White Rose, Persian Essence, Spring Flowers, Ess. Bouquet, Millicleurs, Mignonette, Victoria Bouquet, Rondeletia, Patchouly; all well recommended; price, 2s. 6d. each, or 20s. lot. J. A. Wood, 17 New Street, Barnsley.

Furniture paste, very superior, cleans and puts a brilliant gloss on polished or other furniture, &c., 2s. 6d.; baking powder (original) worth 10s., 2s. 6d. The excellence of these preparations secures for them a large sale; reference, or sample post free. H. Harc, 81 South Street, Goole.

WANTED.

Petro's pump. E. Taylor, Droltwich.

A dental chair. "Dentist," 1 Sloane Square, London.

Madvig's Latin Grammar. F. W. Hollingworth, Stahland.

Three or four grain Cocking's pill-piping machine, small size. 20/156.

Bell-metal mortar and pestle, capacity about two pints. 16/158.

Small soda-water machine, or part of plant. Lowest price to 5/160.

Stopped rounds 60 lbs. and 80 lbs. Kershaw, Gloster Road, Birkdale, Southport.

Hooper's "Physician's Vade Mecum;" state a price and condition. 37/152.

Quinine; state what quantity for disposal, the maker, and price for cash. 35/156.

A student's microscope; state price and particulars. Metcalfe, Chemist, Hull.

"Acton on Venereal Disease," latest edition. W. C. E., 31 Hanover Street, Liverpool.

Two 10 or 12-gall. pear-shaped carboys, with stands. Brown & Garduer, Swaffham.

A second-hand shallow sponge bath; size and price to Henry Churchill, Lower Norwood.

Four or 5 gross gold-paper labels for bottles and drawers, assorted sizes, cheap. Nicholas, Diss.

Mahogany-fronted drawers 10 feet long 3 feet 6 inches high, with lockers. Borden Driffield.

Vulcaniser, dentallathe, tools, and specimen cases. Mr. Longshaw, 3 Elizabeth Street, Good Lane, Salford.

Sealing and stopping instruments. State particulars and lowest price. Russon, 58 Street, Birmingham.

Sixteen dozen Spillsbury's drops, any price bottles that might be in stock. Stone & Son, Chemists, Exeter.

Dentist's chair, second-hand, in good order, at spittoon; Drnitt's "Vade Mecum," 100 edition, or later. Ellidge, Ryde.

To purchase, or borrow for two months, the "Pharmacographia." Terms to H. J. Jackson, Chemist, Bridlington Quay.

Recipe for making hair colour restorer, not a dye also silvering liquid for cleaning and leaving a coating of pure silver on electro goods, &c. 12/157.

Wills' "Postal System" (Major) complex Sutton's "Volumetric Analysis" (letter only). Willies, 47 Gower Place, London W.C.

A lamp and bracket, suitable for a chemist and druggist. State price. Address Watson & Co. Chemists and Dentists, Church Street, Seaham Harbour.

The whole or part fixtures and fittings of chemist's or surgeon's, with or without stock. Thomson, 1 Nile Terrace, Trafalgar Road, Old Kent Road, S.E.

A good mahogany kneehole writing table, with drawers, top lined with leather, centre desk fitted up inside with drawers, &c., about 4 feet 6 inches long, 2 feet 6 inches wide, or one without centre desk. 16/159.

Good-sized wall glass case for warehouse, suitable for storing petroleum lamps; not necessary but if with drawers not objected to; good condition; cheap for cash; eight 30-oz. bottles. Address, with particulars, G. Briggs, 11 Bridge Street, Goole.

Eighteen 4-lb. blue jars, eight doz. 30-oz., eight doz. 20-oz. wide-mouth stoppered shop rounds, eight doz. 8-oz. narrow mouth, all gold labelled, two 30-inch specic jars, mahogany stands, eight 3-gall. carboys mahogany circular stands, all in good condition. Full particulars to "Chemists," care of Messrs. Flood & Co., 102 Blackman Street, London, S.E.

ADDRESSES WANTED.

The address of a Mrs. Wilson, lately at 10 Great Stanhope Street, Bath, with her sister, Miss Barker, and a lady named Igerton, previously at Eastbourne. Reply to B. K. Kershaw, Eastbourne.

Exports of Drugs, Medicines, &c.,

FROM THE PORT OF LONDON,

FOR THE FOUR WEEKS ENDING MARCH 1, 1878.

The following list has been compiled from official sources, and is as nearly accurate as it can be made. It professes to record every shipment of the above-named goods in the period defined:—

- A. A. ABRAHAMS & Co.—To Jamaica: *Drugs and Mdens*, 5, P R M, 34*l*.
- H. AHRENS & Co.—To Yokohama: *Mdens*, 10 pkgs, A & Co, 60*l*.; 2 cs, H A & Co over Nos in dia, do., 104*l*.
ugs, 3 cs, H A & C, 150*l*.; 2 cs, 41 in invt tri, H A C on top on either side, 100*l*.—To Hiogo: *Mdens*, H A C over tri, 11*l*.; 11 pkgs, H A & Co, 48*l*.
- ALDRIDGE & Co.—To Hiogo: *Drugs*, 10 ck, C j T C in cross r B B & Co, 3*l*.; 22 pkgs, 131*l*.—To Bombay: *Mdens*, kgs, T T in dia over S M S, 24*l*.
- ALLEN BROS. & Co.—To Bombay: *Mdens*, E M M T in ss, 14*l*. To Calcutta: *Mdens*, 3 cs Nos in dia A B & Co, 20*l*.
- APOLLINARIS Co.—To Otago: *Mineral Waters*, 25 cks, W J S, 50*l*.
- W. AREGON.—To Gothenburg: *Cardamoms*, 2 cs S B, 100*l*.
- C. F. ASHMORE & Co.—To New York: *Drugs*, 27 cs, B X O r B K, 811*l*.; 23 pkgs, D X O over B K, 145*l*.
- E. ATKINS & Co.—To Boulogne: *Opium*, 5 cs (784 lbs), P H V, 10*l*. *Drugs*, 2 brls, C in dia, 5*l*.; 5 cs, H V & Co, 48*l*.; 1 kg, F, 50*l*.; 20 brls, R in dia V C, 22*l*.; 1 cs, P over M, 10*l*.
Peruv. Bark, 5 bls, O, 68*l*.; 4 srns, S in H, 100*l*.; 8 srns, E & Co, 78*l*.; 34 bls (33 cwt), J A over T, 480*l*.; 169 bls (30 cwt), 2,900*l*.; 26 bls (30 cwt), I, 420*l*.; 124 bls, K, 2 bls, 1,850*l*.; 290 bls, K, 3,520*l*.; 137 bls, J, 2,140*l*.; 34 bls, L, 4*l*.; 7 pkgs, O, 65*l*.; 10 bls, B, 160*l*.—To Copenhagen: *Mdens*, 1 cs, L C in tri, 20*l*.—To Ostend: *Mdens*, 4 cs, C S E tri, 250*l*.—To Rotterdam: *Peruv. Bark*, 20 bls (17 cwt), P dia, 360*l*.
- J. AVENY.—To Sydney: *Mdens*, 3 cs, R O W in dia, 30*l*.
- BAILEY, SEETHAM & Co.—To Copenhagen: *Mdens*, 1 cs, L in 2 tris between T K, 109*l*.; 1 cs add 10*l*.
- D. BAIRD.—To Swan River: *Mdens*, G H A over De Grey r W A, 10*l*.
- BAISS, BROS. & Co.—To Yokohama: *Drugs*, 2 cs, X, 19*l*.; pkgs, B S Co in dia, 313*l*.; 12 pkgs, X, 132*l*.; 26 pkgs, B S, er Co in dia, 221*l*. To Brisbane: *Drugs*, 5 cks, I L H, 99*l*.—To Colombo: *Drugs*, W B H in dia, 22*l*.—To Trinidad: *ugs*, 3 cs, P G in dia, 10*l*.—To Adelaide: *Drugs*, 1 cs, M G dia over 1 tice A, 45*l*.; 2 cks 1 drm, M C in dia over A, 20*l*. To Launceston: *Drugs*, R P D in dia, 40*l*.
- BANKHEAD, HILL & Co.—To St. Vincent: *Mdens*, 1 cs, 3 P, 16*l*.
- BARRON, SQUIRE & Co. To Calcutta: *Mdens*, 3 cs, D N C, 1*l*.; 1 cs, B N D in dia, 5*l*.; 1 cs, B B in dia, 12*l*.; 9 cs, A A, 4*l*.; 10 cs, B B in dia, 60*l*.; 9 pkgs, C in dia, 60*l*.—To Colombo: *Mdens*, 15 pkgs, N in dia, 186*l*.—To Cape: *Mdens*, 1 cs, A D over R in dia, 1 ck, A D over D F in dia, 80*l*.
- BEELEEPS & WILSON.—To Hambro': *Joaine*, 10 kegs, 2 tris, straight, the other invt, 782*l*.; F M in dia, 9 kegs, F M in dia, 0*l*.
- BERRIS & Co. To Tangiers: *Drugs*, 6 pkgs, R M T, 22*l*.
- A. H. BEVANS. To Yokohama: *Mdens*, 8 cs, F in tri, B on t side, 40*l*.; 4 cks 4 cs, F in tri B S, 92*l*.
- B. W. BLOOS.—To Lisbon: *Opium*, 1 cs (24 lbs), A F, 20*l*.; s (24 lbs), A F, 20*l*. *Sarsaparilla*, 2 bls, A F, 21*l*. *Drugs*, 1 cs, 86*l*.; 2 cs, A F, 21*l*.
- A. G. BILSONY.—To Yokohama: *Mdens*, 2 cs, X, 21*l*.
- BLAGDEN & PRINCE.—To Natal: *Mdens*, 50 cs, M S S in dia, 614*l*.
- BOOTYS STRINGES.—To Canterbury: *Cod Liver Oil*, 21 cks, W S in cross & Co, 116*l*.—To Port Philip: *Cod Liver Oil*, 14 bls, J B in dia, 81*l*.
- BOSANQUET, CURTIS & Co.—To Demerara: *Mdens*, 1 cs, C in dia between B H, 30*l*.
- J. BYRON.—To Cape: *Drugs*, 2 cks, P Co in circ, 32*l*.
- CAHMAIM BROS.—To Hamburg: *Mdens*, 3 cs, A, 31*l*.
- CALDWELL, WATSON & Co.—To Yokohama: *Fgn Drugs*, —, C B in dia, 90*l*.
- A. A. CAMPBELL & Co.—To Wellington: *Mdens*, 9 cs, C D B in tri, 51*l*.; 1 cs, C D B in tri, 8*l*.; 2 cs, C D B in tri, 20*l*.—To Hong Kong: *Mdens*, 2 cs, H K D in dia, 22*l*.
- CEYLON Co.—To Colombo: *Quinine*, 1 cs, C C L over C in circ, 52*l*.
- J. T. CLARK & Co.—To New York: *Fgn Drugs*, 25 bls, S S, 119*l*.
- D. R. CLARKE & Co. —To Port Philip: *Mdens*, 11 cs, C in dia, 90*l*.
- CLAY, COOPER & Co.—To Port Philip: *Drugs*, 1 cs, I over B M in dia, 20*l*.
- CLOSE, LEGGE & Co.—To Bombay: *Mdens*, 5 pkgs, B S M & Co, 37*l*.; 3 cs, S A S K in dia, 16*l*.; 3 cs, B S M & Co, 15*l*.; 15 cs, S A S K in dia, 74*l*.; 12 pkgs, S A K S in dia, 78*l*.; 2 cs, B S M & Co, 15*l*. *Castor Oil*, 3 cs, S A K S in dia, 21*l*.
- D. COHEN & Co.—To Sydney: *Ointment*, — a|d, 24*l*.
Pills, 1 cs, D C & Co, 102*l*. *Powder*, 1 cs, D C & Co, 85*l*.
Mdens, 2 cs, D C & Co, 301*l*.
- W. H. COLE & Co.—To New York: *Fgn Drugs*, 3 bls, A W F, 63*l*.
- T. S. COLLOWAY.—To Algoa Bay: *Mdens*, 1 cs, add, 50*l*.
- J. CONNELL & Co.—To Canterbury: *Mdens*, 2 cs, I in tri, 43*l*.—To Otago: *Mdens*, 2 cs, M & H in dia, 56*l*.
- COULTHARD & Co.—To Calcutta: *Mdens*, 10 cs, S P D, 102*l*.
- G. F. COWARD & Co.—To Calcutta: *Mdens*, 26 cs, G F C, 200*l*.—To Bombay: *Mdens*, 18 cs, G F C, 175*l*.
- W. B. CRANWELL.—To Buenos Ayres: *Mdens*, 2 bls, A in dia over T R N M, 36*l*.; 1 cs, A D H C, 51*l*.; 14 cs 1 ck, A E C, 97*l*.; 1 bl, A in dia over T R N M, 15*l*.; 1 cs, P M C in dia over D, 2*l*.; 4 cs, P M C in dia, 49*l*.; 2 cs, A E C, 12*l*. To Monte Video: *Mdens*, 2 cs, A D H C, 14*l*.; 1 bl, A in dia over T R N M.
- G. CURLING & Co.—To Rio Grande do Sul: *Mdens*, 1 cs, C in dia, 17*l*.—To Yokohama: *Mdens*, 1 bale 3 cks, 39*l*.; 2 cs, X, 20*l*.—To Hongkong: *Mdens*, 13 cs 5 cks, C in dia over W B; 7 cs, C in dia over J N S; 8 cs, C in dia under J L B and over M H, 312*l*. To Hiogo: *Mdens*, 16 cs 11 cks, C in dia over J H, 134*l*.; 27 cks 38 cs, C in dia over J H, 277*l*.—To Bangkok: *Mdens*, 2 cs C in dia over B G, 26*l*.—To Calcutta: *Mdens*, 4 cs C in dia over W S, 37*l*.—To Buenos Ayres: *Mdens*, 2 cs 1 ck, C in dia between M M.—To Monte Video: *Mdens*, 1 ck 13 cs, C in dia over H & Co, 159*l*.—To Natal:

Mdens, 2 cs 1 ck 3 pkgs, M & Co, D in tri; 3 cs 1 ck 1 pkg, W S in dia over D N, 98l.—To Oporto: *Mdens*, 1 cs, C in dia over A F N, 17l.—To Trinidad: *Mdens*, 10 pkgs, C in dia over T & S.—To Mauritius: *Mdens*, 3 cs, C in dia over C & Co, 27l.—To Tangiers: *Mdens*, 2 cs, C in dia over T M, 10l.

D. CURRIE & Co.—To Algoa Bay: *Mdens*, 4 cs, A Dover K in dia, 50l.—To Natal: *Mdens*, 4 cs, WS in dia D K, 38l.

DAKIN BROS. & Co.—To Zanzibar: *Mdens*, 1 cs, S B in dia S M on either side, 23l.—To Natal: *Mdens*, 6 cs, W in dia D on left side, Bros on right, 34l.—To Madras: *Mdens*, 3 cs, B & Co, 20l.; 3 cs, B & Co over T D, 15l.—Yokohama: *Mdens*, 6 cs, W T & Co in dia, 19l.—To Calcutta: *Mdens*, 5 cs, Craig Park in dia, 20l.; 5 cs Chlepper over A Co in dia, 35l.

J. A. DARE.—To Port Philip: *Balsam Peru*, 1 cs, D & A over M in invt tri, 25l. *Mdens*, 10 cs 3 cks, D & S over M, 105l. *Drugs*, 1 cs 3 bls, D & S over M, 42l.—To Brisbane: *Mdens*, 1 cs, B T & Co over B in dia, 11l.; 4 cs, B T & Co, 32l.; 2 cs, B T & Co over B in dia, 90l.; 8 cks 12 cs 3 bls, B T & Co over B in dia, 250l.; 22 cs, B T & Co. over B in dia, 170l.

DAVIES & FLUCK.—To Yokohama: *Drugs*, 2 cks, X, 1 bx 2 cks, 98l.

DAVIS & SOPER.—To Algoa Bay: *Mdens*, 4 cs, H M & Co in tri, 19l.

DAVY, YATES & Co.—To Naples: *Mdens*, 1 ck, D M, 50l.; 2 cs.—To Suazaire: *Mdens*, 2 pkgs, S C, 100l.—To Hiogo: *Mdens*, 1 ck, H W J & Co, 30l.; 20 pkgs, T in dia, 180l.—To Wellington: *Mdens*, 8 pkgs, W & Co over N P, 110l.—To Brussels: *Mdens*, 2 cks, D S over B, 22l.—To Demerara: *Mdens*, 1 pun, 1 cs, K & Co over D, 60l.

DAWSON BROS.—To Yokohama: *Mdens*, 15 pkgs, X, 120l.; 1 cs, 20l.; 1 cs, W G in dia over B B & Co, 5l.—To Calcutta: *Mdens*, 2 cs, C D over 142 in dia over B B & Co, 50l.; 4 cs, A J & Co in dia over B B & Co, 40l.; R K M & Co in dia, 15l.—To Canterbury: *Mdens*, 1 ck, J T R over 10 in dia over B B & Co, 16l.—To Cape: *Mdens*, 5 pkgs, P & Co over 37 in dia, 58l.—To Bremer: *Mdens*, 2 cks, D L, 30l.—To Sydney: *Mdens*, 1 cs, A J W & Co in dia, 25l.; 2 cs, J S A over Nos in dia, 20l.; 5 kgs, M H L in dia over B B & Co, 55l.—To Madras: *Mdens*, 4 pkgs, W E S in dia over B B & Co, 50l.; 1 cs, T Co over 57 in dia B B & Co, 10l.—To Algoa Bay: *Mdens*, 3 pkgs, J N E in dia over B B & Co, 24l.; 6 pkgs, T M in dia over B B & Co, 60l.; 2 cs, J W E in dia over B B & Co, 23l.; 2 cs, R R in dia over B B & Co, 25l.—To Constantinople: *Mdens*, 6 cs, add, 45l.—To Bombay: *Mdens*, 6 pkgs, L G D in dia over B B & Co, 50l.; 11 pkgs, D F K in dia over B B & Co, 110l.; 2 cs, D F K in dia over B B & Co, 25l.—To Port Philip: *Mdens*, 4 pkgs, E H B Son over 19 in sq over B B & Co, 50l.—To Oporto: *Mdens*, 1 cs, B P over 10 H in sq, 20l.; 2 cs, J de S V in dia over B B & Co, 16l.; 1 cs, S C E D in cross, 8l.; 1 box add, 2l.—To Otago: *Mdens*, 9 pkgs, J H in dia over B B & Co, 80l.—To Natal: *Mdens*, 6 cs, J R L in dia over B B & Co, 69l.; 4 pkgs, J R L in dia over B B & Co, 50l.—To Adelaide: *Mdens*, 1 cs, G W B W over Nos in dia, 45l.—To Brisbane: *Mdens*, 3 cs, M W over Nos in dia over B B & Co, 36l.—To Buenos Ayres: *Mdens*, 2 pkgs, E E C & Co over 150 in tri over B B & Co, 40l.; 11 pkgs, C in dia B A, 80l.—To Swan River: *Mdens*, 2 cs, S H in dia over B B & Co, 25l.—To Hamburg: *Mdens*, 3 pkgs, V H in dia over B B & Co, 20l.

DOMIER & Co.—To Hambro': *Quinine*, 7 srns 110 lbs, J A, 13l.; 1 srn 121 lbs, T P, 14l. *Drugs*, 1 cs, A over H H, 1 cs, F E N P H, 13l.

DUFF, LAST & Co.—To Mossel Bay: *Drugs*, 1 cs, Nos in dia, 27l.—To Mauritius: *Mdens*, 2 cs, 7108 in dia, 28l.

A. DURANT & Co.—To Calcutta: *Mdens*, 1 cs, R N in dia, B B on left side, 4l.; 5 E P over S in dia, 67l.; 1 cs, B H & Co in dia, 5l.; 7 cs, E P over L in dia, 57l.; 20 cks, E P over L in dia, 12l.; 5 cs, E P over S in dia, 42l.—To Bombay: *Mdens*, 1 cs, B H & Co in dia, 14l.

EDWARDS.—To Canterbury: *Mdens*, 1 cs, 6 in tri, A J W at left side, 10l.

EGAN, HALL & Co.—To Adelaide: *Drugs*, 1 cs, E H in dia over W C, 25l.; 1 ck, E H in dia over W C, 25l.

J. ELLIOTT.—To Calcutta: *Mdens*, 6 cks, B L D in tri, 32l.; 8 cs, B P over J, 59l.; 2 cs, J & R 33l.; 1 cs, D P over C, 18l.; 1 cs, D P over C, 16l.; 2 cks, B L D over E in tri, 43l. *Cod*

Liver Oil, 9 cs, B L D over E in tri, 53l.; 8 cs, B L D in tri, 53l.; 10 cs, N P D, 70l.: *Mdens*, 1 cs, B P over J, 46l.

ESCOMBE BROS. & Co.—To Calcutta: *Mdens*, 2 cs, R S over T & Co in dia, 42l.; 8 cs, R S over T & Co in dia, 133l.—To Brisbane: *Castor Oil*, 10 cs, J W over C, 22l.—To Cochin: *Drugs*, 4 cs, H G & Co, 22l.

EVANS, LESCHER & Co.—To Calcutta: *Mdens*, 5 cs, 60 in dia, 3 cs, S S & Co in dia, 236l.; 11 cs, S S & Co in dia, 62l., 6 cs, S S & Co in dia, 80l.; 14 cs, S S & Co in dia, 107l.; *Cod Liver Oil*, 3 cs, S S & Co in dia, 12l.—To Naples: *Mdens*, 5 cs, K in dia, 76l.—To Marseilles: *Mdens*, —, V in dia C, 12l.—To Kurrachee: *Mdens*, —, O in dia, 28l.

R. B. FASTENEDGE.—Madras: *Mdens*, 1 cs, E T C over F, 20l.; 3 cs, C N C & Sons over F, 20l.; 1 cs, —, 7l.; *Cod Liver Oil*, 4 cs, C N C & Sons, 26l.; 4 cs, C N C & Sons, 26l.—To Calcutta: *Quinine*, 1 cs, R in dia R B E, 48l.; *drugs of quinine*, 5 cs, 33l.

F. FATTINE.—To Genoa: *Peruv bark*, 186 bls, O R over G, O R over F, N over C C J J, 3,300l.

J. W. FISHER.—To Hamburg: *Fgn. Drugs*, 2 cs, T between F W, 18l.; 1 bag, L B & Co, 15l.; 2 bls, D T, 9l.; 1 cs, D T, 18l.; 2 cs, J M & Co, 34l.; 1 cs, M, 13l.; 2 bls, S W, 5l.; 1 cs, S W, 10l.; 2 cs, C R & Co, 17l. *Drugs*, 2 cs, R in cir, 20l. *Fgn. Peruv. Bark*, 1 bl, S W, 14l.—To Barcelona: *Fgn. Drugs*, 44 pkgs, H V R, 54l.; 1 cs, A & V, 20l.; —, F T B & Co, 21l.; 2 pkgs, H V R, 45l.; 1 cs A V, 9l. *Peruv. Bark*: 2 srns, H V R, 77.—To Odessa: *Fgn. Drugs*: 4 pkgs K F, 21l.; 11 cs, L & K, 62l.; 18 pkgs, L & K, 75l. *Fgn. Peruv. Bark*: 1 srn, L & K, 10l.—To Hambro': *Drugs*. 1 cs, B F, 5l.; 3 cs, X X, "O" over and "S" under, 19l. *Fgn. Drgs*, 1 cs, A C over L G, 17l.; 2 cs F C M, 16l.—To Lisbon: *Fgn. Drugs*, 6 bls, S in dia, 12l.; 1 bag, S in dia, 27l.; 4 pkgs, ringed tri, 12l. *Fgn. Peruv. Bark*, 2 pkgs, S in dia, 59l.—To Rotterdam: *Fgn. Peruv. Bark*, 1 srn, S in tri over E, 20l. *Fgn. Drugs*, 2 cs, dble tri, 1 cs —, 1 cs, W F, 17l. *Drugs*, 2 bls, L in dble tri, 9l. *Peruv. Bark*, 2 bls, B & H, 19l.—To Copenhagen: *Fgn. Drugs*, 1 cs, L in cir, 10l.; 1 cs, L in cir, 30l. *Drugs*, 3 cs, M R, 45l.—To New York: *Fgn. Drugs*, 57 bags, 109l.; 20 bags, 79l.—To Amsterdam: *Fgn. Peruv. Bark*, 1 srn, cross in dia, 14l.—To Antwerp: *Fgn. Drugs*, 1 cs, B in dia, 11l.—To Port Philip: *Fgn. Drugs*, —, R M & Co in dia, 7l.—To Bremen: *Peruv. Bark*, 1 srn, B in tri, 33l. *Fgn. Drugs*, —, B in tri, 10l.—To Konigsberg: *Fgn. Drugs*, 2 cs, O, 16l.—To Dantzic: *Fgn. Drugs*, 1 cs F E, 15l.

J. FORSEY.—To Bombay: *Mdens*, 1 cs, 984 over E in dia, between V & B, 19l.; 51 cs, Nos in dia between V & B, 189l.; 2 cs Nos over E in dia between V & B, 20l. *Drugs*, 2 cks, 11 over A in dia between V & B, 19l.; 1 cs, 22 over A in dia between V & B, 53l.; *Quinine*, 5 cs, E in dia between V & B, 238l. To Tientsin: *Drugs*, 2 cs, C W C in dia, 21l.

W. J. FOSKETT.—To New York: *Myrabolams*, 80 pkgs, S in dble tri, 69l.

F. H. FAULDING & Co.—To Adelaide: *Mdens*, 2 cs, F over A in dble tri, 16l.; 25 cs, F over A in dble tri, 244l.; 37 cs, 1 ck F over A in dble tri 610l.; 24 cs, F over A in dble tri, 88l.; *Drugs*, 10 drms F over A in dble tri, 10l.; 2 cs, F over A in dble tri, 14l.; 3 cs, F over A in dble tri, 55l.

J. & A. B. FREELAND.—To Penang: *Mdens*, 7 cs, W A P, 91l.; 89 pkgs, C arrow A over O H M S, 1,200l.—To Cape: *Mdens*, 5 cs, C arrow A over O H M S, 23l.; 2 pkgs, C arrow A over O H M S, 9l.—Singapore: *Mdens*, 15 pkgs, C arrow A over O H M S, 128l.

FREEMAN & ALLEN.—To Madras: *Mdens*, 3 cs, B over F & A in tri, 28l.

H. GANETT.—To Shanghai: *Mdens*, 2 cs, W C, Co in dia 140l.

GELLATLY & Co.—To Calcutta: *Drugs*, 5 cs, D M B, with cross, 204l.; *Mdens*, 16 pkgs, L M B in dia, 140l.

GELLATLY, HANKEY & Co.—To Zanzibar: *Mdens*, 1 cs, J B in dia, S M over, 20l.—To Bushire: *Mdens*, 3 cs, G B, 27l.—To Bombay: *Mdens*, 2 cs, N M in dia, 29l.

GENERAL STEAM NAVIGATION Co.—To Hamburg: *Mdens*, 1 cs, j A de j, 32l.

C. F. GRIHARAT.—To New York: *Mdens*, 3 cks, M R R, 1 cs C B I R in dia, 79l.; 2 pkgs M R R, 18l. *Drugs*, 6 bls T, 2 A B, 34l.

A. M. GILLESPIE.—To Barbadoes: *Mdens*, 1 es, j M S, 87l.
 W. GILLET.—To Hamburg: *Drugs*, 2 es, H V & Co, 21l.;
 s, Y in dia, 27l.; 3 bls, T in Y over C M S, 15l.—To Bremer:
ugs, 2 es, Y in tri, 27l.—To Marseilles: *Drugs*, 1 es, J C R
 dia with S over to left, 10l.—To Rotterdam: *Drugs*, 2 es
 & Co in dia, 21l.; 1 es, N in dia, 11l.

F. GRAF.—To Bremer: *Peruv Bark*, 10 es (102 cwt), D over
 A in tri R, 615l.; 3 scks (2 cwt), Dover C A in tri, R, 15l.
 s (3 cwt), F S, 20l.; 4 bls (5 cwt), T K over B, 33l.; 34
 over K K over C, 18 bls, F G over E, 34 b s, A M M S C
 cross, 855l.; 32 srns, T, 470l.; 40 bls, S over A A, 490l.;
 bls, C over K K over R, 235l.; 50 srns, J V, 920l.; 4 scks,
 I over O, 20l.—To Naples: *Peruv Bark*, 4 es (2 cwt), T in
 , 40l.

H. GREY.—To Havre: *Drugs*, 60 es, W B over R R W,
 l.—To Odessa: *Castor Oil*, 20 es, L R, 69l.—To Brussels:
ugs, 1 es, E M W, 10l.; 3, G D F, *Peruv Bark*, 1 srns, 42l.
 To Constantinople: *Cod Liver Oil*, 10 cks, F B, 72l. *Drugs*,
 kgs, F B, 21l.—To Hambro': *Drugs*, 20 bags, L, 35l.—To
 emer: *Drugs*, 30 es (1,700 lbs), C K, 575l.—To Calcutta:
dens, 1 es, R W P, 120l.—To Marseilles: *Drugs*, 10 bls,
 J, 60l.

GRIMWADE, RIDLEY & Co.—To Port Philip: *Drugs*, 1 es
 bl, F G Co over M in tri, 91l.; 1 es, F G & Co over M in
 td tri, 39l.; 1 es, F G & Co in invtd tri, 23l.; 2 es, 15l.;
 es, 30l.; 23 pkgs, 235l.; 1 es, 10l.; 3 es, 35l.; 52 es,
 & Co over M in tri, 443l.; 178 es, F G & Co over M in
 —To Sydney: *Drugs*, 3 es, E B in dia, 6 es, E B in dia,
 es, E B in dia, 8 es, E B in dia, 281l.; 1 es, E B in dia, 8l.;
 es, 28l.; 15 es, 111l.; 2 es, E B in dia, 13l.; 12 es, 30l.;
 s, 47l.; 2 es, E B in dia, 2 es, 4 es, 112l.; 4 es, E B in dia,
 ; 5 pkgs, E B in dia, 35l.; 1 bl, E B in dia, 6l.; 5 es, E B
 dia, 225l.; 127 es, E B in dia, 547l.; 6 es, E B in dia, 212l.;
 es, E B in dia, 102l.; 2 cks, E B in dia, 13l.; 1 tee, E B in
 , 6l.; 4 es, E B in dia, 13l.; 14 es, E B in dia, 154l.; 65 es,
 B in dia, 64l.; 2 es, E B, 83l.; 11 es, E B in dia, 227l.;
 kgs, E B in dia, 40.—To Brisbane: *Drugs*, 1 es, E B & Co
 dia, 24l.; 1 es, E B & Co in dia, L on right side, 20l.; 1 es,
 B in dia, 3l.—To Canterbury: *Drugs*, 1 es K P & Co in tri,
 ; 4 pkgs, K P & Co in tri, 23l.—To Wellington: *Drugs*,
 es, F G & Co in dia, 101l.; 26 es, F G & Co over W in dia,
 ; 17 es, F G & Co over W in dia, 155l.—To Otago: *Drugs*,
 pkgs, R P & Co in dia D, 109l.; 38 es, R P & Co in dia D,
 ; 21 cks, R P & Co in dia D, 16l.; 44 es, K P & Co in
 , 249l.; 77 es, K P & Co in dia D, 249l.; 16 es, K P & Co
 dia D, 29. *Arsenic*, 2 pkgs, K P & Co in dia D 12l.—To
 leutta: *Drugs*, 4 pkgs, M & Co in dia, 65l.

GRINDLEY & Co.—To Bombay: *Mdens*, 39 pkgs, 650l.

GAUBERT & METCALF.—To Hamburg: *Peruv. Bark*, 2 srns
 cwt), B over S, 38l. *Drugs*, 4 pkgs, G in tri, 98l.; 2 es,
 R over S, 10 es, H A E & Co in dia, 3 es, A T C, 15 bls,
 I, 1 es, L M & Co over S, 135l.; 2 es, T A C, 20l.—To
 noa: *Drugs*, 20 pkgs, B over S, 157l.—To Amsterdam:
rabolams, 280 bags, G in tri, 204l.—To Rotterdam: *Drugs*,
 ls, P over S, 20 bls, H A E G in dia, 27l. *Peruv. Bark*,
 bls (96 cwt), R over Z, 1,220l. *Drugs*, 4 bls, L M A, 36l.
uv. Bark, 1 ble, W B C, 19l.; 91 pkgs, tri, 750l. *Mdens*,
 bls, R over Z. *Drugs*, 5 es, W B C, 44l.—To Bremer:
ugs, 2 es, W R over S, 18l.—To Bordeaux: *Drugs*, 4 es,
 over R, 26l.—To Antwerp: *Drugs*, 15 bags, K in dia,
 kgs, H B, 107l.; 20 bls, H A E C in dia, 13l.; 10 es, A,
 ; 2 es, M over M, 26l. *Peruv. Bark*, 2 bls 2 srns, M over
 70l.; 2 srns, H B, 35l.—To Marseilles: *Drugs*, 1 es,
 I S, 1 es, M over S, 2 bags, M F, 1 es, M over S, 8 bdls,
 over S, 8 bags, M over S, 107l.; 60 bags, H A E C in dia,
 ls, J B C, 77l.—To Havro: *Drugs*, 1 es, F C over S, 1 es,
 over S in tri, 26l.—To Nantes: *Drugs*, 3 es, P T over S,
 B over S, 31l.—To Venico: *Drugs*, 1 ble, M over S, 7l.;
 s, J S over S, 17l.—To Brussels: *Drugs*, 3 es, E I S, 36l.;
 bags, H A E & Co in dia, 11l.; 2 srns, C F over M, 37l.;
 s, M R in dia, 39l.

HARRIS & Co.—To Dantzic: *Drugs*, 12 es, D Z over M F,
 ; 2 bls, M F, 17l.; 2 es, M F over G B, 19l.; 2 bgs, M F,
 14 bgs, M F over G B, 18l.; 2 chests, M F, 10l.; 2 bls,
 B, 10l.—To Bremen: *Drugs*, 1 es, H W, 8l.; 1 es, F M, 9l.
 To Rotterdam: *Peruv Bark*, 132 bls, M G over B, 41 es,
 I over B, 15 bls, N G over B, 4 bags, E I over B, 2 bags,
 B, 1,800l.; 260 srns, S B, 4,600l.—To Copenhagen: *Drugs*

1 box, L, 17l.—To Dunkirk: *Castor Oil*, 5 es, M in dia be,
 twecn G D. To Hamburg: *Peruv Bark*, 1 es, E, 4 bls, O 2,
 60l.

H. J. HART.—To Sydney: *Mdens*, 4 es, C H over M in tri,
 25l.

T. HAVISIDE.—To Bombay: *Drugs*, 3 es, D B over Nos in
 dia, 15l.; 3 pkgs, B C over Nos in dia, 5l.; 1 es, B C over Nos
 in dia, 6l.; 1 es, K & Co in dia, 5l.; 16 pkgs, C L E in tri, 260l.

R. HAZARD.—To Seville: *Mdens*, 2 es, C over H P in dia,
 13l. *Peruv Bark*, 2 srns, P H, 51l.

H. HEAD.—To Shanghai: *Mdens*, 3 es, C H over S in dia,
 57l.

HEMMINGS & Co.—To Naples: *Mdens*, 5 es 1 ble, I Co in dia,
 53l.

HERF & Co.—To Yokohama: *Mdens*, 10 cks, T O in sq
 between M & N, 2 cks, J in dia between M & N, 90l.; 15 cks,
 9 in dia M N, 75l. *Drugs*, 4 es, T U in dia M N, 5 es, Nos in
 dia M N, 73l.; 7 es, O in dia, 4 es, Nos in dia M N, 5 es, X,
 176l.; 16 es 3 cks, O in dia, 70l.; 10 es, O in dia, 54l.; 6 cks,
 O in dia, 44l.; 19 es, No in dia over M N, 154l.; 13 es, 2 kgs,
 O in dia, 160l.

HICKIE, BORMAN & Co.—To Bombay: *Drugs*, 71 pkgs, add,
 700l.

T. HICKS.—To Port Philip: *Mdens*, 1 es, N in tri between
 S D, 40l.

W. F. HILDER.—To Hambro': *Myrabolams*, 80 bags, S in
 tri, with invtd tri over, 72l.

A. C. HITCHCOCK.—To Rotterdam: *Drugs*, 1 es, M R in dia,
 18l.; 1 es, M R in dia, 1 es, S C in dia H, 34l.—To Hambro':
Drugs, 19 bags, V P C, 26l.; 15 bls, M R over C N, 31l.—To
 Copenhagen: *Drugs*, 3 bls, M R.—To Trieste: *Drugs*, 16 bls,
 S M, V S, I V S, 28l.

O. HITZSCHOLD.—To Antwerp: *Senna*, 3 es, S over I, 5l.;
Senna Pods, 2 bls, S S, 29l.—To Brussels: *Drugs*, 1 brl, B & P,
 26l.

F. A. HODGKINSON & Co.—To Adelaide: *Mdens*, 1 es a/d,
 30l.—To Bangkok: *Mdens*, 2 es, a/d, 40l.—To Yokohama:
Mdens, 52 pkgs, 18 in dia S, 23l.—To Calcutta: *Mdens*, 5 es,
 S & Co, 46l.

HODGKINSON, PRESTONS & Co.—To Cape: *Mdens*, 1 bx 1 es,
 W S in dia over Algoa Bay, 15l.—To Gothenberg: *Mdens*,
 1 es, a/d, 12l.

HODGKINSON, STEAD & Co.—To Mauritius: *Mdens*, 5 es,
 S & T in dia, 14l.; 5 es, E I over mark, 67l.; 4 pkgs, B & Co
 over mark, 31l.; 2 es, C G in dia, 10l.—To Kurrachee: *Mdel*
Oil, 4 drums, E S, 13l.; 1 es, E S, 7l.; 7 es, E S, 158l.; 1 es,
 E S, 12l.—To Malta: *Mdens*, 2 es, a/d, 16; 3 es, a/d, 45l.—
 To Demerara: *Mdens*, 1 pun, J D A & Co, 10l.; 7 pkgs 1 pun
 1 ck, S & Co in dia, 205l.—To Belize: *Mdens*, C T H in dia,
 39l.—To Port Philip: *Mdens*, 5 es 19 pkgs, H L & Co in dia,
 348l.—To Barbados: *Mdens*, 5 pkgs, T J C over mark, 27l.

F. HODGSON.—To Colombo: *Drugs*, 1 ck, M D C over S in
 dia, 5l. *Quinine*, 5 es 500 ozs, Nos in dia between W & L,
 285l.

G. D. HOLDER.—To Otago: *Pills*, 15 es, W & C T & Co in
 dia, 160l.

T. HOLLOWAY.—To Harlingen: *Mdens*, 1 es, add, 19l.

T. HONYCHURCH & Co.—To Port Philip: *Drugs*, 17 es,
 W P in dia, 8 es, G L in dia, 233l.; 3 es, F S in dia, 60l.—To
 Sydney: *Drugs*, 3 cks 12 es, R R in dia S, 150l.—To Leg-
 horn: *Drugs*, 7 es, H R in dia F, 110l.

W. HURLEY.—To Naples: *Mdens*, 7 es 1 ck, D over S, 50l.

F. IRVINE.—To Sydney: *Mdens*, 9 es, E B in dia D, 260l.

T. IRVING & Co.—To Brisbane: *Mdens*, 6 es, B T Co over
 B in dia, 73l.

JESSOP & HUMBLE.—To Calcutta: *Quinine*, 10 es, N F Co in
 dia, 500l.

JOHNSON & SON.—To Calcutta: *Mdens*, 8 es, J B & E S over
 Calcutta in dia, 140l.—To Bombay: *Mdens*, 1 es, M & B in
 dia over J—S, 32l.

R. JOHNSTON & Co.—To Calcutta: *Mdens*, 2 es, 12l.

JONES, PRICE & Co.—To Hong Kong: *Opium*, 3 cs, H A, 360l.

E. H. JONES.—To Naples: *Peruv. Bark*, 4 cs, R, 216l.

JONES, SEARLE & Co.—To Calcutta: *Mdens*, 3 cs, L M D as & Co in dia, 52l.

T. KEATING.—To Brisbane: *Mdens*, 1 cs B T over Bin dia, T K, 38l.

H. S. KINO & Co.—To Calcutta: *Mdens*, 3 pkgs, D in tri invtd, H S K & Co, 24l.; 2 cs, R M L in tri, 19l.; 2 cs 3 cks, D in tri, H S R & Co, 20l. *Quinine*, 1 cs, in tri, H S K & Co, 47l.—To Madras: *Mdens*, 3 cs, G R & Co in dia over H S K & Co, 51l.; 5 pkgs, M & Co over H S K & Co, 46l.

LANOTON, EDDEN & Co.—Sydney: *Drugs*, 4 cks 4 cs, A J W, 125l.; 7 cas, J W in dia, L B, 40l.; 2 cks 4 cs, J W in dia, L B, 74l.

LARKIN & HADLAND.—Calcutta: *Mdens*, 15 cs, B N B & Co, 94l.; 12 cks 1 cs, J N S & Co in 2 tris, 102l.; 2 cs B L D in dia, 237l.; 21 cs B N B & Co, 135l.; 5 cs N L D, 3 cs, C & Co, 367l.; 5 pkgs, B L D in dia, 68l.—Lisbon: *Mdens*, 4 pkgs, A F & S, 186l.; 1 cs, G P in dia, 1 cs, A E & S over H, 142l.; 2 cs, 4 cks S & S over H, 124l.; 1 cs, J M B, 48l.; 2 cs, J M B, 1 cs, C P in dia, 2 cks, A S over H, 5 cs, 332l.—Oporto: *Mdens*, 1 cs 3 cks, B in dia, 86l.; 2 pkgs, B in dia, 22l.—Hambro': *Mdens*, 2 cs, S in dia, 24l.; 6 cks, G in tri, 164l.—Smyrna: *Mdens*, 1 cs add, 17l.—Shanghai: *Mdens*, 1 cs, B in dia over J L & Co, 251l.—Brussels: *Mdens*, 1 ck, G D & Co, 64l.—Messina: *Mdens*, 2 cs, A W E & C, 81l.

LARKINS & HADLAND.—Algoa Bay: *Mdens*, 12 cs, B G T & Co, 310l.—Brisbane: *Mdens*, 20 cs 2 cks, W J P in dia, 203l.; 2 cs, 79l.—New York: *Mdens*, 4 cs, J W & Co in dia, 350l.

LEDGER, SMITH & Co.—To New York: *Cod Liver Oil*, 15 cs, E F & Co in dia, 100l.; 15 cs, A H E T Co in cross, 100l.—To Alexandria: *Drugs*, 1 cs, F G in dia, L S & Co, 8l. *Sedlitz Powders*, 1 cs, F G in dia, L S & Co, 10l.

LEETE & BAILLON.—To Brussels: *Mdens*, 2 cs, a/d, 21l.

LEINHARDT & Co.—To Yokohama: *Drugs*, —, A B C, 12l.

P. LESLIE.—To Madras: *Mdens*, 2 cs, M T & Co, 18l.

A. LEVI & Bros.—To Salonica: *Magnesia*, 2 hhds, M J H S, 14l.—To Alexandria: *Sarsaparilla*, 3 bls, M P, 26l.

J. LEWIS & Co.—To Launceston: *Mdens*, 1 cs, R G & Co in dia, 25l.—To Canterbury: *Mdens*, 1 cs, W S & Co in dia over R F, 25l.

D. LINDO.—To Jamaica: *Mdens*, 4 cs, W S in dia, 16l.; 5 cs, P E A in dia, 19l.; 16 pkgs, S R in dia, 48l.; 1 ck, D L M in cross, 10l.; 4 cs, D L M, 18l.

B. S. LLOYD & Co.—To Brisbane: *Mdens*, 2 cs, L Q & Co over B in dia, 42l. *Castor Oil*, 20 cs, B C in dia B, 23l.

J. LYON & Co.—To Bombay: *Drugs*, 10 cs, N M in dia, 240l.

LYNCH BROS.—Busreh: *Quinine*, 1 cs, S L & Co in tri, 22l.

LYNCH & Co.—To New York: *Apothecaries' Wares*, 2 cs, 60l.

MACLEAN, MARIS & Co.—To Zanzibar: *Cod Liver Oil*, 1 ck 9 gls, P D, 12l.

F. MANGLES & Co.—To King George's Sound: *Mdens*, 1 cs, W H C, 22l.

R. MARTIN & Co.—To Madras: *Mdens*, 2 cs, H & Co in heart, 22l.

N. MATHER.—To Malta: *Mdens*, 141 in tri, between W M, 11l.

S. MAW, SON & THOMPSON.—To Brisbane: *Mdens*, 2 cs, B T & Co in dia B, 27l.—To Adelaide: *Mdens*, 1 ck 3 cs 433 in dia over S M S T, 96l.—To Naples: *Apothecaries' Wares*, 1 cs, L S in dia, 37l.—To Shanghai: *Mdens*, 1 cs, 532 in dia over S M S T, 97l.—To Calcutta: *Apothecaries' Wares*, 1 cs, add, 12l.; *Mdens*, 1 cs, add, 10l.

J. McCONNELL & Co.—To Demerara: *Quinine*, 3 cs, 273 over B B, 99l.

T. MEADOWS & Co.—To Calcutta: *Mdens*, 3 cks 1 cs A/d, 53l.—To Colombo: *Mdens*, 22 cs 1 ck, F N S over J in tri, 206l.

P. MOLLER.—To Otago: *Mineral Waters*, 3 cs, I M W in dia, 6l.; *Cod Liver Oil*, 2 cs, T M W in dia, 16l.

MORGAN & ALLPORT.—To Port Philip: *Mdens*, 3 pkgs, M & Co over M, 61l.

MORRIS, HART & Co.—To Brisbane: *Drugs*, 1 cs S P over B in square, 24l.

J. MORRISON & Co.—To Swan River: *Mdens*, 1 cs, E B over Perth, 5l.; 1 cs, E B over Perth, 1 cs, E B over Perth, 58l.

J. T. MORTON & Co.—To Natal: *Drugs*, 20 cs, C C P W in dia, 21l.; 10 cs, R B H in dia, 10l.; 11 cs, M S S in dia, 19l.; 5 cs, E & Co in dia, 36l.—To Bombay: *Drugs*, 9 cs, D A, 9l.; 10 cs, D A, 10l.; 7 cs, E H A in dia, 8l.; 10 cs, D A, 10l.; 9 cs, C J Co in dia, 9l.; 8 cs, H E F in dia, 8l.; 14 cs, 9, A G B in dia, 14l.; 4 cs, S R N P in cross, 15l.—To Brisbane: *Drugs*, 10 cs, Nos in dia, 10l.; 12 cs, W & Co over G H W, 11l.; 20 cs, H & Co in tri over B, 18l.—To Algoa Bay: *Drugs*, 25 cs, L L & Co in dia, 25l.; 12 cs, M S in dia, 11l.; 1 cs, M B & Co over 2 in tri between M B, 11l.—To Auckland: *Drugs*, 15 cs, H M B in dia, 16l.—To Sydney: *Drugs*, 30 cs, G & Co in dia, 30l.; 25 cs, J & Co in dia, 26l.—To Otago: *Drugs*, 30 cs, C G & Co over Co, 32l.—To Hiogo: *Mdens*, 50 bls, D in tri over R, 16l.—To Canterbury: *Drugs*, 10 cs, W S, 10l.

MOSENTHAL, SONS & Co.—To Algoa Bay: *Mdens*, 1 cs, L B over H T, 25l.—To Rotterdam: *Mdens*, 1 ck, E M in dia.

MOSES, LEVY & Co.—To Seville: *Mdens*, 4 cs, C B in dia, 20l.

H. N. MUNDAY & Co.—To Tangiers: *Sarsaparilla*, 4 brls, to mark, 48l.; 2 bgs, F, 2l.; 6 bgs, 8l.

F. W. NASH.—To Hamburg: *F. Myrabolans*, 40 bgs, S B in tri over M B, 40l.

NEGRETTE & ZAMBRA.—To Yokohama: *Drugs*, B F C with Nos in dia, 65l.; cs, S in dia, 40l.; 20 cs, N, 40l.; 1 cs, 250 in dia N, 25l.; 1 cs, 142 in dia N, 20l.; 1 cs, C S in dia N, 5l.; 6 cs, C S, 45l.; 1 cs, C S in dia over N, 55l.

NOLLEN, HENRY & Co.—To Boulogne: *Mdens*, 1 cs, F M over B, 1 cs, S B, 22l.; 1 cs, 14l.; 1 cs, 3 cs, M over 1 cs, N S, 31l.; 1 cs, T B, 52l.; 3 pkgs, add, 32l.; 1 bx, 3l.; 3 cs, M in dia, M on right side, 41l. *Peruv Bark*, 37 pkgs (2 tons 4 cwt), L F, 940l. *Drugs*, 5 cs, M S Rome, 15l.

B. NUSSERWANJER.—To Calcutta: *Quinine*, 5 cs, N in dia Q, 250l.; 5 cs, N N in dia, 9 on right side, 230l.

ORR, WRIGHT & Co.—At Penang: *Mdens*, 3 cs, B T & Co, 22l.

E. S. PAUL.—To Hong Kong: *Drugs*, 20 bags, C W over T S, 60l.

J. PENNY.—To Konigsberg: *Drugs*, 1 cs, R M M, 21l.—To Hambro': *Drugs*, 2 cs, E S over G in heart, 29l.; 1 bl, S C in dia, H on left side, 9l.; 2 cs, R H E, 71l.—To Brussels: *Drugs*, 2 bl, B over G, 3l. *Peruv Bark*, 1 bl, O O Z in dia, 12l.

PHILLIPPS, GROVES & Co.—Hambro': *Peru Bark*, 2 bl, W B, 8 bls, 162l. *Drugs*, 1 keg, T A in tri, 35l. *Mdens*, 2 cs, S & H, 20l.—To Antwerp: *Drugs*, 20 bags, H A E & Co, 37l.

E. PUCK.—To Sydney: *Epsom Salts*, 50 cs, M M Co in dia, 34l. *Castor Oil*, 25 cs, M M Co in dia, 27l.; 10 cs, M M Co in dia, 11l. *Drugs*, 20 cs, M M Co in dia, 35l.

C. A. PITTIS.—To Calcutta: *Quinine*, 50 ozs, 1 cs, P in tri over S C D & Co, 22l.

A. POUND.—Marseillos: *Drugs*, 2 cs, A V & Co, 19l.

PRICE, BOUSTEAD & Co.—To Colombo: *Mdens*, 53l.

PRICE BROS.—To Demerara: *Drugs*, 9 cs, Y-Co over D, 1 pkg, Y-Co over D, 1 pun, Y-Co over D, 130l. *Mdens*, 1 bottle, Y-Co over D; 1 cs, S D-Co over M Y-Co. *Mdens*, 11 cks, S D Co over M Y-Co. Adelaide: *Drugs*, 6 cks, X in dia, 36l.

T. PURVIS.—To Port Philip: *Mdens*, 1 cs, Nos in dia over 3 L C, 6 cs, Nos in dia over 3 L C, 13 cs, Nos in dia over 3 L C, 157l.; 2 cs, Nos in dia over R T, Co, 1 ck, Nos in dia over R T, Co, 21 cs, Nos in dia over R T, Co, 5 cs, Nos in dia over R T, Co, 2 cs, Nos in dia over R T, Co, 8 cs, Nos in dia over R T, Co, 225l.; 1 cs, Nos in dia over R T & Co, 11l.; 2 cs

s, Nos in dia over R T & Co, 44l.; 1 cs, 94 in dia over & Co, 9l.; 5 cs, 20 in dia over R T & Co, 22l. *Castor oil*, s 11 gl, —11—, 81l.

EDFERN, ALEXANDER & Co.—To Wellington: *Mdens*, 2 cs, 1 dia, 69l.; 2 cs, R K in dia, 10l.

IDEN & Co.—Oporto: *Drugs*, 1 cs, 2 in dia, 23l.

RITCHIE & Co.—Messina: *Mdens*, 1 cs, M R, 20l.

RITTER & Co.—Leghorn: *Sarsaparilla*, 1 ble, M C under D, 12l.

C. ROBERTSON & Co.—Calcutta: *Drugs*, 1 ck, R B, 16l.; s, R B over 1360 in dia, 35l.

J. ROOK.—Port Philip: *Epsom salts*, 30 cs, 79 in dia over P & W, 12l. *Mineral salts*, 2 cs, L T over M in tri,

ROSENTHAL & Co.—To Port Philip: *Mdens*, —, Nos in over R A & Co M, 156l.; 3 cs, Nos in tri over R A & Co,

RUDD & Co.—To Table Bay: *Castor Oil*, 13 cs, 144 in dia R,

ADGROVE, LUNG & Co.—To Hambro': *Drugs*, 2 cs, K in dia,

SALA & Co.—To Barcelona: *Castor Oil*, 10 cs, F B over 5l.

J. H. SAMPSON.—To Gothenburg: *Drugs*, 1 cs, F, 50l.

SASSOON & Co.—To Hong Kong: *Opium*, 27 chsts, 3,510lb, 2,700l.—To Bushire: *Quinine*, 1 box, A & K, 28l. o Bussorah: *Quinine*, 2 oz, 11l.

SAVAGE & HILL.—To Natal: *Mdens*, 2 cs, T W B & Co, 10l.; s, S & H over N, 54l.

SAW, SAVILL & Co.—To Wellington: *Mdens*, 4 pkgs, W F,

SCHLOSS BROS.—To New York: *Peruv Bark*, 75 srns, R C in dia, 750l.

SCHWEPPE & Co.—To Paris: *Mineral*, 16 eks, J S & Co

COTNEY & EARNSHAW.—To Yokohama: *Mdens*, 125 kgs, A M C over C B, 20 cs, A M C over C Co, 10 cs, A M C C Co, 90l. *Drugs*, 45 cs, A M C over C B, 280l.—To ney: *Drugs*, 3 cs, S over N H in dia, 20l. *Mdens*, 6 cs, r N H in dia, 70l.—To Brisbane: *Medns*, 9 cs, S H Co ia, B on right side, 28l.—To Otago: *Mdens*, 20 pgs, W G T D, 10l.

C. SCRUTTON.—To Zanzibar: *Mdens*, 1 cs steese 15l.

SCRUTTON & SONS.—To Barbadoes: *Mdens*, 1 cs, W G C, 10l.

SHORT, SHORT & Co.—To Colombo: *Mdens*, 2 cs, L A, 18l.

SHORTER & Co.—To Bermuda: *Drugs*, 3 cs, W G & Co, 16l. o New York: *Drugs*, 2 cs, W G & Co, 48l.

B. SLEEMAN.—To Bombay: *Mdens*, 1 cs, S in dia, 5l.; H D K in dia S, 7l.—To Colombo: *Apothecaries' Ware*, gs, in dia, 19l.

C. SMITH.—To Hambro: *Drugs*, 1 box, B over C L, 34l.; C in tri, 90l.

J. & H. SMITH & Co.—To Yokohama: *Mdens*, 3 cs, Z in 205l.; 2 cs, Z in dia, 216l.—To Nagasaki: *Mdens*, 4 cs, in dia S, 2 eks, C S in dia S, 26l.—To Amsterdam: *Mdens*, 3 cs, T H S, 83l.

T. M. SMITH.—To Bremer: *Peruv Bark*, 10 pkgs (11 cwt), 50l.

SORATSON.—To Demerara: *Drugs*, 5 cs, T H W over B ia, 45l.

H. SOUZA.—To Jamaica: *Drugs*, 1 ck, A M Sin dia, 4l., or Oil, 5 drums, A M S in dia, 7l.

STAINES, WATSON & Co.—To Colombo: *Mdens*, 40 pkgs, C in 2 tris, 485l.

STANTON.—To Adelaide: *Cod Liver Oil*, 5 blhds (262 gls), in dia A, 38l.

STEWART & SON.—To Belize: *Mineral Waters*, 6 eks, P, 13l.—To Calcutta: *Mdens*, 16 cs, P S C L, 127l.

STONE & SON.—To Calcutta: *Mdens*, 2 cs, D in dia, 20l., 355 in dia over B & Co, 20l. *Drugs*, 4 cs, 355 in dia over Co, 20l.

STOKER & SON.—To Adelaide: *Cod Liver Oil*, 12 blhds gls, R S over J G, 157l.

TARRY.—To Yokohama: *Drugs*, 5 cs, B, 61l.

D. TAYLOR & SON.—To New York: *Drugs*, 14 bgs, W H S, 10l.; 4 bgs, E in dia, 7l.; 10 brls, G G C, 33l.; 5 serons, R H, 125l.; 10 cs, R H, 83l.; 2 eks 3 cs, R C in dia 57l.; 2 serons 12 bgs 12 bxs 10 brls, M R, 157l.; *Mdens*, 2 cs, E in dia, 8l.; 1 cs, G G C, 8l.

R. D. TAYLOR.—To Copenhagen: *Drugs*, 1 cs, H S D over N C C F, 43l.

TELBROOK, UPTON & Co.—To Algoa Bay: *Mdens*, 3 cs, R S in dia, 57l.—To Cape: *Mdens*, 4 cs, R S in dia, 57l.

J. PERRY & Co.—To Adelaide: *Cod Liver Oil*, 13 eks, D & Co, 489 gls, 68l.—To Japan: *Drugs*, 7 cs, B in tri over Yoko, 140l.; 5 cs, L in dia over Hiogo, 65l.

T. THREDDER & SON.—To Port Philip: *Drugs*, 10 cs, D & S in dia, 43l.—To Calcutta: *Drugs*, 9 cs, S S & Co in dia, 180l.

J. TODD.—To Sydney: *Mdens*, 25 cs, W H S over S, 146l.

TREACHER & Co.—To Bombay: *Medns*, 3 cs, add, 42l.; 1 cs, add, 45l.

S. TUSON & SON.—To Oporto: *Mdens*, 1 ck, C, 26l.

UNION LIGHTERAGE Co.—To Bombay: *Mdens*, 4 cs, H E F over B in dia, 73l.; 1 cs, H E F over B in dia, 30l.

H. VON RONN & Co.—To Algoa Bay: *Mdens*, 1 cs, S B, 11l.; *Castor Oil*, 720 lbs 20 cs, U R S & Co in 2 tris, 22l.

J. VOSS & Co.—To Adelaide: *Mdens*, 2 cs, P F & Co in 2 tris, 43l.; 20 cs, P F & Co in 2 tris, 50l.

WALKER BROS.—To Madras: *Mdens*, 2 bxs, L L over L, 9l.

J. WALTER & Co.—To Rio Janeiro: *Mdens*, 8 pkgs, C V in tri, 49l.; 30 cs, C V in tri, 50l.; 6 cs, C V in tri, 1 brl, C V in tri, 24l.; 3 brls, S on arrow, 41l.

W. WAND.—To Oporto: *Camphor*, 1 ck, F C, 13l.

G. WARD & SONS.—To Rotterdam: *Drugs*, 3 cs, L C in dia H, 79; 2 cs, S N in dia, 33l.; 2 cs, A B, 26; 2 bgs, 28l. 10 cs, G L over S in tri, 200l.; 25 bls, A, 126l.; 1 cs, L G in dia H, 2 cs B, 2 cs A, 35l.; 2 cs, G L over S in tri, 33l.; 1 seron, T, 13l.—To Hambro: *Drugs*, 7 bls, S S 2 pkgs A Z, 43l.; *Peru Bark*, 5 bls, O, 47l.—To Konigsberg: *Drugs*, 5 cs, S A over R, 29l.—To Brussels: *Drugs*, 1 cs, F G, 27l.—To Leghorn: *Drugs*, 1 cs, S N in dia, 17l.—To Bremen: *Peruv Bark*, 1 bl 1 cwt, O Z, 12l.—To Copenhagen: *Drugs*, 2 cs, H Y & Co, 11l.—To Marseilles: *Drugs*, 5 cs, S A over R; 1 ble, Crown over M C.—To Genoa: *Drugs*, 1 cs, F M in dia, 1 cs, E M W over F, 2 cs, M O, 29l.

WARRICK BROS.—To New York: *Drugs*, 40 pkgs, R A, 3l.

T. W. WATSON.—To Port Elizabeth: *Mineral Waters*, 10 cs 18 cwt, B B, 15l.

WEBSTER, STEEL & Co.—To Natal: *Mdens*, 2 cs, S in dia, A, 33l.

J. P. WERNER.—To Calicut: *Mdens*, 1 cs, I E, 57l.

A. F. WHITE & Co.—To Hong Kong: *Drugs*, 1 cs, W in dia over O & Co, 120l.—To Cape: *Drugs*, 1 cs, P in dia, 12l.—To Calcutta: *Drugs*, 8 cs, J B & E S in dia, 120l.; 6 pkgs, C D in dia over D & Co, 30l.; 3 cs, C D in dia over D & Co, 35l.—To Yokohama: *Drugs*, 610 cs, X, 36l.; 14 pkgs, X, 113l.; 4 cs, X, 30l.—To Rio Janeiro: *Drugs*, 5 cs, L L, 18l.—To New York: *Drugs*, 1 cs, C E H over Toronto, 22l.—To Leghorn: *Drugs*, 4 cs, H R, 42l.—To Hiogo: *Drugs*, 15 cs, H in dia, 5 eks, H in dia, 97l.

WHITE & HOLMS.—To Natal: *Mdens* 50 cs, u/d, 54l.

J. WILLIAMS.—To Sydney: *Pills*, 1 cs, W T over 31 in dia, 19l. *Drugs*, 1 cs, W T Co over 31 in dia, 5l.; 2 cs, W T Co over 31 in dia, 40l.; 6 cs, W T Co, 77l.

G. WHYBROW.—To Sydney: *Castor Oil*, 7 cs, B B over Sin tri W P, 12 cs DM in dia, 19l.

S. WINTER.—To Buenos Ayres: *Mdens*, 3 cs, H H, 22l.

A. WOLFEN & Co.—To Port Philip: *Cod Liver Oil*, 5 brls (16 cwt), A W in dia over & Co, 30l.

J. S. WOOD.—To Adelaide: *Mdels*, W J S in dia, 204l.

J. WYMAN.—To Rio Janeiro: *Mdens*, 3 pkgs, A S D, 28l.; 11 eks, S G & Co, 96l.; 7 pkgs, S G & Co, 91l.; 3 cs, A S D, 26l.; 2 eks, L & Co, 18l.; 1 cs, L & Co, 17l.; 3 pkgs, A D in dia, 42l.; 3 eks, A L S, 29l.



THE export trade of the country was relatively better in February than in the previous month, as will be seen by the subjoined figures:—

	1878	1877.	1876.
	£	£	£
January	15,423,911	15,946,080	16,654,512
February	14,896,320	14,393,745	16,482,605

It will be seen that February nearly recovered the difference which January lost when the totals are compared with a year ago. During the two months the declared value was 19,594*l.* less than in the same period last year, and 2,816,786*l.* less than in 1876.

The alkali exports for the month of February show an increase of 2.7 per cent, in quantity, and a decrease of 4½ per cent. in value, when compared with February, 1877. The value of chemical products exported was 6.7 per cent less than last year. The following are the official figures:—Alkali, 381,108 cwt., 151,182*l.* in 1877; 391,426 cwt., 144,370*l.*, in 1878; chemical products, 139,070*l.* in 1877; 129,655*l.* in 1878.

There has been quite an excitement in the quinine market, due partly to Government orders and partly to an anticipation of an insufficient supply of quinine-yielding bark. The chief English makers decline orders for early delivery, and the Continental makers are large buyers of bark at London sales. At the present time there is no very definite quotation, but prices from 12*s.* to 13*s.* have been paid within the past few days.

At the bark sales this week 657 packages soft Colombian and New Granada were partly sold, including 170 bales, ordinary at 1*s.* 2*d.* to 1*s.* 8*d.*; middling, 2*s.* to 2*s.* 5*d.*; good middling to good, 2*s.* 6*d.* to 3*s.*, with one lot at 3*s.* 10*d.* Of 439 bales, &c., Calisaya about one-half sold at some advance, ordinary flat, &c., at 3*s.* to 3*s.* 10*d.*; middling qualities, 4*s.* to 4*s.* 8*d.*; good and fine, from 6*s.* to 8*s.* 1*d.* 30 bales hard Pitayo withdrawn, 104 bales Carthagena sold at 1*s.* 5*d.* to 3*s.* 9*d.*; one lot, 4*s.* 6*d.*

East India cinchona met a strong demand, and good and fine Government-grown Madras, of which the supplies mainly consisted, realised full to dearer prices. 577 bales Government, Madras (Neilgherry), sold, chiefly Crown, branch at 3*s.* 2*d.*, good 4*s.* 1*d.*; natural, rather thin and mossy, 6*s.* 4*d.* to 6*s.* 5*d.*; rather broken to good mossy quill, 6*s.* 8*d.* to 7*s.* 5*d.*, short quill and flat to good clean ditto from 7*s.* 6*d.* to 9*s.* 3*d.*; fine pale flat renewed from 9*s.* 6*d.* to 11*s.* 10*d.*; unmossed yellow, 12*s.* 7*d.* Of 75 packages of other kinds about 50 bags Ceylon sold, twigs and chips, 1*s.* 3*d.* to 1*s.* 4*d.*, good ditto, 3*s.* 7*d.*; bold broken quill, 4*s.* 7*d.*, extra long rather mixed 4*s.* 9*d.* to 4*s.* 10*d.* per lb.

Of the heavy chemicals soda has been livelier during the past ten days than for some time. There has been much better demand for crystals, and price improved to 3*l.* 12*s.* 6*d.* per ton ex ship, closing firmly thereat. Ash was also rather more inquired for, but it remained quieted at 1½ per cent. per cwt. landed. Bicarb shared in the improvement, both in demand and price, the value at the close being 9*s.* 9*d.* per cwt. landed. Caustic was also in somewhat mere demand, and firm at 11*l.* 10*s.* to 12*l.* per ton for cream to white 60 to 62 per cent. Bleaching powder is 3*d.* down at 6*s.* per cwt. landed with a fair demand. Cream of tartar is stronger than last month and is now offered at 100*s.* per cwt., but demand sluggish. Tartaric acid is unchanged in quotation. Citric is a shade easier at 2*s.* 3*d.* per lb. Ammonias are generally firm, arsenic is slightly easier. Sulphate of copper has fractionally declined.

The Government has naturally spent some of its six millions in saltpetre, which has caused a slight advance, and for forward delivery prices are somewhat stronger than present quotations.

On the drug market there are no changes of special importance, except as regards the price of cinchona barks already referred to. Castor oil is again fractionally dearer, and rhubarb has sold at advanced rates. Cubobs have declined after their last month's rise. Saffron is likely to be rather higher, and the new lemon and bergamot are said to be of finer flavour than usual, and in fairly abundant supply.

Quicksilver is purchasable at 2*s.* 6*d.* per bottle lower. It is now quoted at 7*l.* 2*s.* 6*d.* A downward tendency has been the characteristic of turpentine, which is 1*l.* lower than last month.

Linseed oil is also 1*l.* cheaper than last month, and rape oil is 2*l.* 10*s.* to 3*l.* 10*s.* lower. Olive is steady at previous prices, and petroleum has not fluctuated considerably.

Subjoined is a statement of the stocks of the chief drugs in the port of London on February 28, 1878.

	February 28 Stocks		February 28 Imports		February 28 Deliveries	
	1878	1877	1878	1877	1878	1877
Aloes.....cs	2,013	2,997	601	435	628	600
".....kegs	14	25	—	—	—	—
".....gourds	1,581	2,614	25	1,259	753	274
Aniseed, Star.....chts	1,028	1,685	262	150	195	122
Arrowroot.....cs	11,082	8,203	87	456	2,316	2,061
".....bxs & tins	5,063	4,486	362	1,490	1,873	1,116
Balsam.....cs, &c.	138	445	—	132	50	4
Bark, Medicinal.....cs, &c.	710	114	302	131	761	16
".....srns, &c.	11,655	8,723	7,385	3,483	6,528	3,440
".....Tanners'.....tins	3,832	3,794	1,373	727	1,555	1,670
Borax.....pkgs	983	1,140	—	85	50	34
Bees' Wax.....bls & srns	495	337	1	45	60	172
".....cs & cs	1,447	1,093	262	485	190	367
".....cakes	54	74	150	40	104	6
Wax Japan vegetable pkgs	6,532	6,815	579	3,020	361	821
Camphor.....pkgs	4,099	7,366	226	2,522	632	936
Cardamoms.....chts	473	783	41	83	139	181
Cocculus Indicus bgs, &c.	2,271	2,387	—	—	165	2
Colombo root.....pkgs	606	898	44	241	55	60
Cream of Tartar.....cs	99	112	41	82	54	68
Cubobs.....bgs	185	275	—	—	109	5
Dragonsblood.....chts	123	68	6	33	21	25
Galls, E.I.....cs & cs	1,999	1,788	319	1,791	1,482	1,464
Mediterranean.....eks	987	821	441	585	68	221
Gum—						
Ammoniac.....pkgs	526	496	58	27	15	19
Animi Copal.....	8,728	4,488	1,254	966	996	1,299
Arabic, Barbary.....	967	998	331	592	385	465
Turkey.....	741	535	390	289	118	226
E.I.....	2,843	1,910	1,407	991	736	573
Assafœtida.....	245	488	—	199	57	63
Benjamin.....	1,020	714	263	285	207	168
Damar.....	762	1,679	22	224	353	680
Galbanum.....	31	31	—	—	4	1
Gamboge.....	128	164	7	54	45	99
Guaiaicum.....	38	34	3	42	2	17
Kino.....	10	18	1	—	3	—
Kowrie.....tins	935	946	279	462	365	324
Mastic.....pkgs	146	116	29	11	7	5
Myrrh, E.I.....	276	255	33	75	17	7
Olibanum.....	4,028	3,426	1,843	2,819	772	84
Sandarac.....	253	612	710	435	235	333
Senegal.....tins	15	13	5	—	—	5
Tragacanth.....pkgs	982	385	877	403	92	79
Ipecacuanba.....cs & bgs	230	112	11	18	93	60
Jalap.....bls	470	593	6	21	73	78
Nux Vomica.....pkgs	1,210	1,506	6	6	43	11
Oil—						
Castor.....cs	7	3	—	4	—	1
".....tins	2,226	8,567	477	6,211	1,831	2,767
Palm.....	401	313	167	358	582	553
Cocconut.....	2,547	3,328	1,162	2,285	1,373	1,863
Olive.....cs, &c.	852	623	516	678	961	572
Aniseed.....cs	210	300	40	120	67	33
Cassia.....	687	507	7	136	53	31
Opium.....chts, &c.	2,224	1,141	—	—	—	—
Rhubarb.....chts	866	811	134	85	286	223
Sarsaparilla.....bls	1,297	1,187	339	563	264	291
Senna.....bls, &c.	3,067	2,477	320	577	493	651
Shellac.....cs, &c.	40,735	30,079	6,334	7,899	5,271	4,719
Terra Japonica, Gambier tins	2,138	609	2,463	894	2,104	1,826
Cutch.....	2,504	2,589	454	124	277	280
Turneric.....	1,386	952	786	720	488	401

The annual meeting of the Civil Service Supply Association was held at the Cannon Street Hotel on the last day of February. The report showed the balance sheet was made up to December 31, and represented the previous four months. In that period, goods to the amount of 426,000*l.* had been bought and sold to the value of 435,000*l.*, the stock being valued at over 200,000*l.* Other sources of income raised the gross profit to 42,000*l.* The working expenses were over 33,000*l.*, or 7*l.* 13*s.* 1*d.* per cent. of the sales. The net profit for the period was 7,049*l.* 10*s.* 7*d.* The proceedings were, as usual, uproarious the currants, coffee, pickles, sugar, sausages, and other good supplied being unfavourably criticised. One member also warmly objected to the Committee's dinners, which amounted to 190*l.* in ten months. Another complained of the delay in making up prescriptions. A respectable section were opposed to any extension of the operations of the Association, or encroachments on legitimate trade. The Association was started for the benefit of civil servants, and these were now elbowing aside the carriage people. The report was at last adopted.

Monthly Price Current.

Prices quoted in the following list are those actually obtained in the market for articles sold in bulk. Our Retail Subscribers must expect to purchase at these market prices, but they may draw from the list for useful conclusions respecting the prices at which articles are sold by the Wholesale Firms.

CHEMICALS.		1878.		1877.	
		s. d.	s. d.	s. d.	s. d.
Acetic	per lb.	0 2½ to	0 0	0 3½ to	0 0
Nitric	per lb.	2 3 ..	0 0	2 8 ..	0 0
Hydrochloric	per cwt.	5 0 ..	7 0	4 0 ..	7 0
Nitric	per lb.	0 4½ ..	0 0	0 4½ ..	0 0
Oxalic	per lb.	0 4½ ..	0 5	0 5 ..	0 5½
Sulphuric	per lb.	0 0½ ..	0 1	0 0½ ..	0 1
Tartaric crystal ..	per lb.	1 4½ ..	1 5	1 7 ..	0 0
powdered ..	per lb.	1 4½ ..	1 5	1 7 ..	0 0
MONEY ore	per ton	240 0 ..	300 0	240 0 ..	300 0
crude ..	per cwt.	37 0 ..	0 0	26 0 ..	38 0
star	per lb.	50 0 ..	51 0	55 0 ..	56 0
ENIC, lump	per lb.	26 0 ..	0 0	26 0 ..	26 6
powder ..	per lb.	9 6 ..	10 6	9 9 ..	10 0
STONE, rough	per ton	110 0 ..	115 0	120 0 ..	130 0
roll ..	per cwt.	9 3 ..	10 0	9 9 ..	10 6
flour ..	per lb.	11 6 ..	13 6	13 6 ..	0 0
SE, dry	per oz.	0 10½ ..	0 0	0 6 ..	0 0
BLACK, dry ..	per cwt.	8 6 ..	0 0	8 6 ..	0 0
ESIA, calcined ..	per lb.	1 10 ..	0 0	1 10 ..	0 0
CURY	per bottle	142 6 ..	0 0	145 0 ..	0 0
UM, red	per cwt.	20 6 ..	20 9	23 3 ..	0 0
orange ..	per lb.	33 0 ..	0 0	37 0 ..	0 0
IPITATE, red ..	per lb.	3 7 ..	0 0	4 1 ..	0 0
white ..	per lb.	3 6 ..	0 0	4 0 ..	0 0
SIAN BLUE ..	per lb.	0 0 ..	0 0	0 0 ..	0 0
PS—					
Am	per ton	127 6 ..	135 0	140 0 ..	145 0
powder	per lb.	150 0 ..	0 0	157 6 ..	160 0
Ammonia :					
Carbonate	per lb.	0 5½ ..	0 5½	0 5 ..	0 5½
Hydrochlorate, crude,					
white	per ton	580 0 ..	720 0	560 0 ..	670 0
British (see Sal Am.)					
Sulphate	per ton	420 0 ..	430 0	370 0 ..	375 0
gol, Cape	per cwt.	75 0 ..	95 0	80 0 ..	91 0
Red	per lb.	67 0 ..	73 0	65 0 ..	75 0
Oporto, red ..	per lb.	32 6 ..	33 0	33 6 ..	34 0
Sicily	per lb.	60 0 ..	65 0	60 0 ..	62 0
ashes (see Potash and Soda)					
aching powd ..	per cwt.	6 0 ..	0 0	7 0 ..	7 3
ax, crude	per lb.	27 0 ..	33 0	30 0 ..	40 0
British refnd ..	per lb.	36 0 ..	37 6	40 0 ..	42 0
omel	per lb.	3 2 ..	3 8	3 8 ..	0 0
pper:					
ulphate	per cwt.	19 6 ..	0 0	21 9 ..	22 0
ppers, green ..	per ton	52 6 ..	60 0	61 0 ..	62 6
rosive Sublimate p. lb.		2 7 ..	0 0	3 1 ..	0 0
Tartar, French, p. cwt.		100 0 ..	101 0	103 0 ..	104 0
brown ..	per lb.	0 0 ..	0 0	95 0 ..	0 0
om Salts	per cwt.	4 3 ..	6 0	5 3 ..	7 0
umber Salts ..	per lb.	3 0 ..	4 6	4 6 ..	5 6
nc:					
acetate, white, per cwt.		11 0 ..	20 0	11 0 ..	20 0
agnesia: Carbonate ..	per lb.	47 6 ..	0 0	47 6 ..	0 0
ash:					
Bichromate	per lb.	0 0 ..	0 0	0 4½ ..	0 0
Carbonate:					
Potashes, Canada, 1st					
sort	per cwt.	24 0 ..	0 0	24 6 ..	25 0
Pearlshes, Canada, 1st					
sort	per cwt.	31 6 ..	32 0	35 0 ..	0 0
Chlorate	per lb.	0 7½ ..	0 0	0 9 ..	0 9½
Prussiate	per lb.	0 10½ ..	0 10½	0 11½ ..	1 0½
red ..	per lb.	1 8 ..	1 9	2 1 ..	2 2
Cartrate (see Argol and Cream of Tartar)					
assium:					
Bromide	per cwt.	2 2 ..	0 0	0 0 ..	0 0
Chloride	per cwt.	0 0 ..	0 0	0 0 ..	0 0
Iodide	per lb.	13 0 ..	0 0	7 9 ..	8 0
amine:					
Sulphate, British, in					
bottles	per oz.	0 0 ..	0 0	10 6 ..	10 9
Sulphate, French ..	per lb.	12 6 ..	13 0	10 3 ..	0 0
Acet	per lb.	0 7 ..	0 0	0 7½ ..	0 8
Ammoniac, Brit. cwt.		42 0 ..	43 0	44 0 ..	45 0
Altpetre:					
Bengal, 6 per cent. or					
under	per cwt.	22 0 ..	23 0	20 3 ..	21 0
Bengal, over 6 per cent.					
per cwt.		21 6 ..	21 9	19 0 ..	20 0
British, refined ..	per lb.	25 6 ..	28 0	23 6 ..	25 0
la: Bicarb mate, p. cwt.		9 6 ..	9 9	11 0 ..	11 6
Carbonate:					
Soda Ash ..	per deg.	0 1½ ..	0 0	0 2 ..	0 0
Soda Crystals per ton		72 6 ..	0 0	80 0 ..	82 6
Hyposulphite, per cwt.		0 0 ..	0 0	0 0 ..	0 0
Nitrate	per lb.	15 6 ..	15 9	12 6 ..	0 0
AROF LEAD, White cwt.		37 6 ..	0 0	37 0 ..	38 0
Brown, cwt.		26 6 ..	0 0	27 0 ..	0 0
PRR (see Brimstone)					

		1878.		1877.	
		s. d.	s. d.	s. d.	s. d.
VERDIGRIS	per lb.	1 1 to	1 5	1 1 to	1 5
VERMILION, English ..	per lb.	2 8 ..	0 0	3 2 ..	0 0
China ..	per lb.	2 2 ..	0 0	2 9 ..	0 0
DRUGS.					
ALOES, Hepatic	per cwt.	80 0 ..	180 0	70 0 ..	160 0
Socotrine ..	per cwt.	85 0 ..	200 0	65 0 ..	170 0
Cape, good ..	per cwt.	38 0 ..	40 0	49 0 ..	50 0
Inferior ..	per cwt.	33 0 ..	37 0	41 0 ..	48 0
Barbadoes ..	per cwt.	40 0 ..	160 0	55 0 ..	190 0
AMBERGRIS, grey	per oz.	80 0 ..	90 0	60 0 ..	75 0
BALSAM—					
Canada	per lb.	0 9 ..	1 6	1 1 ..	0 0
Capivi	per lb.	1 6 ..	1 6½	1 10 ..	2 0
Peru	per lb.	4 3 ..	0 0	5 3 ..	0 0
Tolu	per lb.	4 0 ..	4 3	11 0 ..	12 0
BARKS—					
Canella alba	per cwt.	18 0 ..	22 0	20 0 ..	24 6
Cascarilla	per cwt.	15 6 ..	23 0	16 0 ..	21 0
Peru, crown & grey per lb.		1 0 ..	2 9	1 3 ..	3 1
Calisaya, flat ..	per lb.	3 6 ..	4 6	2 9 ..	5 6
quill ..	per lb.	4 6 ..	5 5	2 3 ..	7 3
Carthage ..	per lb.	1 8 ..	2 4	2 5 ..	3 7
Columbian ..	per lb.	2 0 ..	4 6	2 0 ..	5 3
E. I. ..	per lb.	1 3 ..	4 10	2 6 ..	4 6
good & fine ..	per lb.	6 4 ..	11 10	5 0 ..	0 0
Pitayo ..	per lb.	0 6 ..	1 6	0 10 ..	2 4
Red ..	per lb.	3 3 ..	5 0	2 0 ..	4 6
Buchu Leaves ..	per lb.	0 2½ ..	0 3	0 1 ..	1 1
CAMPHOR, China ..	per cwt.	80 0 ..	0 0	80 0 ..	87 6
Japan ..	per cwt.	82 6 ..	0 0	90 0 ..	0 0
Refin. Eng. per lb.		1 1½ ..	0 0	1 2½ ..	0 0
CANTHARIDES ..	per lb.	2 0 ..	5 0	2 6 ..	3 6
CHAMOMILE FLOWERS p. cwt.		50 0 ..	200 0	45 0 ..	200 0
OSTOREUM	per lb.	9 0 ..	30 0	9 0 ..	29 0
DRAGON'S BLOOD, lb. p. cwt.		85 0 ..	280 0	140 0 ..	260 0
FRUITS AND SEEDS (see also Seeds and Spices).					
Anise, China Star per cwt.		75 0 ..	90 0	90 0 ..	105 0
Spanish, &c. ..	per cwt.	45 0 ..	50 0	28 0 ..	40 0
Beans, Tonquin ..	per lb.	1 9 ..	5 0	1 7 ..	2 7
Cardamoms, Malabar					
good ..	per lb.	4 9 ..	6 3	3 9 ..	4 2
inferior ..	per lb.	1 9 ..	4 5	0 10 ..	3 8
Aleppy ..	per lb.	2 0 ..	6 0	2 0 ..	3 9
Madras ..	per lb.	2 2 ..	3 9	1 10 ..	3 5
Ceylon ..	per lb.	3 6 ..	4 9	4 6 ..	5 0
Cassia Fistula ..	per cwt.	80 0 ..	89 0	10 0 ..	32 0
Castor Seeds ..	per cwt.	0 0 ..	0 0	5 0 ..	10 6
Cocculus Indicus ..	per cwt.	8 3 ..	10 0	9 0 ..	11 0
Colocynth, apple ..	per lb.	1 0 ..	1 9	0 6 ..	0 11
Croton Seeds ..	per cwt.	26 0 ..	35 0	35 6 ..	36 6
Cubebs ..	per cwt.	32 0 ..	35 0	28 0 ..	29 0
Cummin ..	per cwt.	20 0 ..	35 0	18 0 ..	33 0
Dividivi ..	per cwt.	13 0 ..	16 0	10 0 ..	15 0
Fenugreek ..	per cwt.	6 0 ..	12 0	9 0 ..	12 0
Guinea Grains ..	per cwt.	23 0 ..	0 0	20 0 ..	0 0
Juniper Berries ..	per cwt.	6 6 ..	9 0	8 0 ..	10 0
Nux Vomica ..	per cwt.	9 0 ..	14 6	9 0 ..	13 0
Tamarinds, East India ..	per cwt.	12 0 ..	19 0	10 0 ..	15 6
West India ..	per cwt.	21 0 ..	26 0	10 0 ..	15 6
Vanilla, large ..	per lb.	20 0 ..	27 0	39 0 ..	45 0
inferior ..	per lb.	15 0 ..	19 0	15 0 ..	38 0
GINGER, Preserved, per lb.		0 4½ ..	0 7	0 5 ..	0 6½
HONEY, Chili ..	per cwt.	40 0 ..	50 0	40 0 ..	47 6
Jamaica ..	per cwt.	38 0 ..	43 0	35 0 ..	47 0
Australian ..	per cwt.	0 0 ..	0 0	0 0 ..	0 0
IPECACUANHA ..	per lb.	4 9 ..	5 6	4 8 ..	4 10
ISINGLASS, Brazil ..	per lb.	3 0 ..	4 10	2 6 ..	4 9
Tongue sort ..	per lb.	3 5 ..	5 3	3 0 ..	5 11
East India ..	per lb.	2 0 ..	2 1	2 0 ..	4 10
West India ..	per lb.	4 0 ..	4 4	4 0 ..	4 7
Russ. long staple ..	per lb.	8 0 ..	15 0	8 0 ..	12 6
inferior ..	per lb.	0 0 ..	0 0	0 0 ..	0 0
Simovia ..	per lb.	1 6 ..	3 0	2 0 ..	3 3
JALAP, good ..	per lb.	0 8 ..	1 0	0 8 ..	0 9½
infer. & stems ..	per lb.	0 7 ..	0 7½	0 7 ..	0 7½
LEMON JUICE ..	per degree	0 1 ..	0 1½	0 1 ..	0 1½
LIME JUICE ..	per gall.	0 0 ..	0 0	1 3 ..	1 8
LIQUORICE, Spanish per cwt.		34 0 ..	39 0	0 0 ..	0 0
Liquorice Root ..	per cwt.	0 0 ..	0 0	12 0 ..	30 0
MANNA, flaky ..	per lb.	3 6 ..	4 0	5 6 ..	6 0
small ..	per lb.	1 4 ..	1 6	1 6 ..	1 9
MUSK, Pod ..	per oz.	20 0 ..	52 6	15 6 ..	50 0
Grain ..	per oz.	25 0 ..	60 0	35 0 ..	60 0
OILS (see also separate list)					
Almond, expressed per lb.		1 9 ..	0 0	1 4 ..	0 0
Castor, 1st pale ..	per lb.	0 5½ ..	0 5½	0 4½ ..	0 5½
second ..	per lb.	0 4½ ..	0 5½	0 4½ ..	0 5½
Cod Liver ..	per gall.	4 0 ..	5 0	6 6 ..	8 6
Croton ..	per oz.	0 2½ ..	0 2½	0 2½ ..	0 0
Essential Oils:					
Almond ..	per lb.	25 0 ..	0 0	20 0 ..	0 0
Anise-seed ..	per lb.	6 6 ..	0 0	6 6 ..	6 9
Bay ..	per cwt.	0 0 ..	0 0	65 0 ..	70 0
Bergamot ..	per lb.	10 0 ..	15 0	10 0 ..	15 0
Cajuput ..	per bottle	3 0 ..	3 6	3 0 ..	3 6
Caraway ..	per lb.	9 0 ..	9 3	9 0 ..	0 0
Cassia ..	per lb.	3 0 ..	0 0	3 10 ..	4 0
Cinnamon ..	per oz.	4 6 ..	5 6	2 6 ..	6 6
Cinnamon-leaf ..	per lb.	0 1½ ..	0 2½	0 2½ ..	0 3
Citronelle ..	per lb.	0 2½ ..	0 3	0 2 ..	0 0
Clove ..	per lb.	8 0 ..	0 0	8 9 ..	0 0
Juniper ..	per lb.	0 0 ..	0 0	0 0 ..	0 0
Lavender ..	per lb.	1 8 ..	7 0	1 8 ..	7 6
Lemon ..	per lb.	5 0 ..	8 6	7 0 ..	9 0
Lemongrass ..	per oz.	0 2½ ..	0 0	0 2½ ..	0 0

1878.				1877.				1878.				1877.				
Essential Oils, continued:—								Oils, continued:—								
Neroli	s. d.		s. d.	s. d.		s. d.		WHALE, South Sea, pale, per tun	£ s.		£ s.	£ s.		£ s.		
Orange	3	0	to 6	3	0	to 6	0	yellow ..	32	0	to 0	31	10	to 0		
Otto of Roses	0	4	.. 0 4½	0	6½	.. 0 7		brown ..	28	0	.. 29	0	0	.. 31		
Patchouli	0	4	.. 7	6	0	.. 9	0	East India, Fish ..	25	10	.. 0	25	0	.. 26		
Peppermint:								OLIVE, Gallipoli ... per ton	0	0	.. 0	51	0	.. 0		
American	10	9	.. 12	12	9	.. 14	6	Gloja	0	0	.. 0	50	0	.. 0		
English	24	0	.. 25	0	34	0	.. 35	0	Levant	51	0	.. 0	0	0	.. 0	
Rosemary	2	0	.. 2	6	2	0	.. 2	6	Mogador	50	0	.. 0	0	0	.. 0	
Sassafras	2	3	.. 2	6	2	3	.. 2	6	Spanish	51	0	.. 0	0	0	.. 0	
Spearmint	12	0	.. 15	0	12	0	.. 15	0	Sicily	0	0	.. 0	49	0	.. 0	
Thyme	0	0	.. 0	0	0	0	.. 0	0	COCOANUT, Cochín..	46	10	.. 47	0	41	5	.. 41
Mace, expressed .. per oz.	0	6	.. 0 10	0	6	.. 0 10		Ceylon	30	5	.. 0	37	10	.. 38		
OPIMUM, Turkey .. per lb.	16	0	.. 17	0	24	0	.. 25	0	Mauritius ..	33	0	.. 49	0	21	0	.. 37
Inferior	10	0	.. 12	0	10	0	.. 18	0	GROUND NUT AND GINGELLY:							
QUASSIA (bitter wood) per ton	100	0	.. 130	0	100	0	.. 140	0	Bombay	0	0	.. 0	0	0	.. 0	
RHUBARB, China, good and								Madras	0	0	.. 0	40	0	.. 0		
fine	3	6	.. 3 11	2	6	.. 4	5	PALM, fine	40	0	.. 40	10	40	0	.. 0	
Mid. to ord.	1	0	.. 2	6	0	8	.. 1	4	LINSEED	25	10	.. 0	24	15	.. 26	
Dutch Trimmed..	0	0	.. 0	0	0	0	.. 0	0	RAPSEED, English, pale ..	34	10	.. 0	37	10	.. 0	
ROOTS—Calumba .. per cwt.	25	0	.. 50	0	40	0	.. 42	6	brown	32	10	.. 0	35	10	.. 0	
China	25	0	.. 30	0	30	0	.. 32	0	Foreign, pale ..	35	10	.. 0	39	0	.. 0	
Chiretta	0	3	.. 0	4	0	2½	.. 0	3	brown	0	0	.. 0	0	0	.. 0	
Galangal	20	0	.. 20	6	20	0	.. 26	0	COTTONSEED	31	0	.. 0	30	5	.. 31	
Gentian	10	0	.. 21	0	23	0	.. 24	0	LARD	46	0	.. 0	64	0	.. 0	
Hellebore	0	0	.. 0	0	0	0	.. 0	0	TALLOW	43	0	.. 44	0	31	0	.. 51
Orris	55	0	.. 65	0	26	0	.. 75	0								
Pellitory	70	0	.. 76	0	70	0	.. 76	0	TURPENTINE, American, cks.	24	6	.. 6	0	28	0	.. 0
Pink	0	0	.. 0	0	0	0	.. 0	0	French	0	0	.. 0	0	0	.. 0	
Rhatany	0	4	.. 0	8	0	4	.. 1	0	PETROLEUM, Crude	0	0	.. 0	0	0	.. 0	
Seneca	3	6	.. 3	9	3	6	.. 3	9	refined, per gall.	0	0	.. 0	1	0½	.. 1	
Snake	0	10	.. 1	0	0	6	.. 0	7	Spirit ..	0	8	.. 0	5½	0	.. 0	
SAFFRON, Spanish ..	20	0	.. 32	0	33	0	.. 37	0	SEEDS.							
SALEP	240	0	.. 300	0	0	0	.. 0	0	CANARY	43	0	.. 49	0	49	0	.. 60
SARSAPARILLA, Lima per lb.	0	0	.. 0	0	0	5	.. 0	7	CARAWAY, English per cwt.	43	0	.. 45	0	41	0	.. 45
Guayaquil	2	2	.. 2	6	1	9	.. 2	0	German, &c.	48	0	.. 49	0	0	0	.. 0
Honduras	0	11	.. 1	5	1	1	.. 1	6	CORIANDER	18	0	.. 23	0	0	0	.. 0
Jamaica	1	2	.. 2	6	1	9	.. 2	10	HEMP	0	0	.. 0	33	6	.. 35	
SASSAFRAS	9	0	.. 11	0	0	0	.. 0	0	LINSEED, English ..	0	0	.. 0	53	0	.. 64	
SCAMMONY, Virgin .. per lb.	0	0	.. 0	0	24	0	.. 30	0	Black Sea & Azof	49	0	.. 0	0	0	.. 0	
second & ordinary ..	0	0	.. 0	0	6	0	.. 22	0	Calcutta ..	48	0	.. 0	48	6	.. 0	
SENA, Bombay	0	1	.. 1	5	0	1	.. 0	4	Bombay ..	50	0	.. 0	51	6	.. 0	
Tinnivelly	0	1	.. 1	0	0	2½	.. 2	0	St. Petersburg ..	48	0	.. 50	0	51	0	.. 0
Alexandria	0	5	.. 1	6	0	5	.. 2	5	Mustard, brown .. per bshl.	0	0	.. 0	12	0	.. 15	
SPERMACEETI, refined	1	4	.. 0	0	1	4	.. 0	0	white ..	13	0	.. 16	0	13	0	.. 16
American	1	3	.. 0	0	1	0	.. 1	2	POPPY, East India, per qr.	4½	6	.. 0	0	51	0	.. 0
SQUILLS	0	2½	.. 0	4	0	2	.. 0	3	SPICES.							
GUMS.	£ s.		£ s.	£ s.		£ s.		CASSIA LIGNEA .. per cwt.	44	0	.. 50	0	55	0	.. 65	
AMMONIACI drop .. per cwt.	1	18	.. 2	0	2	2	.. 2	10	Vera	22	0	.. 45	0	22	0	.. 45
lump ..	0	15	.. 1	15	1	0	.. 1	14	Buds	66	0	.. 0	0	75	0	.. 80
ANIMI, fine washed	13	0	.. 14	10	11	0	.. 12	15	CINNAMON, Ceylon:							
bold scraped ..	10	10	.. 12	15	9	15	.. 10	15	1st quality	1	10	.. 3	1	1	9	.. 3
sorts	6	5	.. 9	10	6	15	.. 9	10	2nd do.	1	8	.. 2	6	1	6	.. 2
dark	5	10	.. 6	10	4	0	.. 6	10	3rd do.	1	5	.. 1	11	1	2	.. 7
ARABIC, E.T., fine									Telliecherry ..	0	0	.. 0	0	0	0	.. 0
pale picked ..	2	18	.. 3	14	3	3	.. 4	0	CLOVES, Penang ..	1	7½	.. 1	11	2	4	.. 2
sorts, md. to fin.	2	5	.. 2	17/6	2	15	.. 3	2	Amboyna	1	3	.. 1	5	1	7	.. 1
garblings ..	1	5	.. 2	0	1	5	.. 2	9	Zanzibar	1	2	.. 1	3	1	2	.. 1
TURKEY, pick. gd. to fin.	6	0	.. 9	10	6	10	.. 10	15	GINGER, Jam., fine per cwt.	91	0	.. 202	6	91	0	.. 207
second & inf.	3	0	.. 5	15	3	0	.. 6	10	Ord. to good	53	0	.. 90	0	54	0	.. 9
in sorts ..	2	10	.. 3	16	2	5	.. 3	5	African	24	0	.. 0	0	29	0	.. 0
Gedda	1	14	.. 1	19	1	6	.. 1	10	Bengal	21	6	.. 22	6	27	0	.. 2
BARBARY, white ..	0	0	.. 0	0	2	4	.. 2	3	Malabar	26	0	.. 28	0	28	6	.. 0
brown ..	2	7	.. 2	12	2	0	.. 2	2/6	Cochin	50	0	.. 115	0	50	0	.. 115
AUSTRALIAN	1	19	.. 2	15	1	15	.. 2	7	PEPPER, Blk. Malabar, per lb.	0	4½	.. 0	5½	0	4½	.. 0
ASSAFETIDA, cm. to fin.	0	15	.. 2	0	0	18	.. 2	11	Singapore	0	3½	.. 0	0	0	4	.. 0
BENJAMIN, 1st & 2nd	45	0	.. 80	0	27	0	.. 45	0	White Telliecherry ..	0	10	.. 1	4	0	10	.. 1
Sumatra 1st & 2nd	5	10	.. 14	0	6	15	.. 12	0	Cayenne	1	4	.. 3	0	2	0	.. 3
3rd ..	2	4	.. 5	5	3	10	.. 5	5	MACE, 1st quality ..	2	2	.. 3	3	2	3	.. 3
COPAL, Angola red	6	0	.. 6	15	6	0	.. 6	15	2nd and inferior ..	1	0	.. 2	1	1	0	.. 2
Benguela ..	4	0	.. 5	0	4	0	.. 5	0	NUTMEOS, 78 to 60 lb.	3	11	.. 4	6	3	9	.. 4
									90 to 80 ..	3	0	.. 3	10	3	2	.. 3
									132 to 95 ..	1	10	.. 2	11	2	3	.. 3
Sierra Leone, per lb.	0	6½	.. 0	9	0	6	.. 0	11	PIMENTA	0	4	.. 0	4½	0	4	.. 0
Manilla	18	0	.. 27	0	15	0	.. 27	0	VARIOUS PRODUCTS.							
DAMMAR, pale	75	0	.. 79	0	66	0	.. 68	0	COCHINEAL—							
Singapore	72	6	.. 79	0	65	0	.. 67	6	Honduras, black .. per lb.	2	2	.. 2	6	3	0	.. 3
EUPHORBUM	9	0	.. 15	0	9	0	.. 15	0	" silver ..	2	0	.. 2	1	2	9	.. 2
GALBANUM	0	9	.. 1	3	0	5	.. 1	3	" pasty ..	1	10	.. 0	0	2	8	.. 0
GAMBAGE, pekd. pipe per cwt.	180	0	.. 260	0	220	0	.. 270	0	Mexican, black ..	2	0	.. 2	1	2	11	.. 3
GUALACUM	1	8	.. 2	5	1	3	.. 3	0	" silver ..	1	11	.. 2	0	2	9	.. 0
KINO	81	0	.. 86	0	40	0	.. 50	0	Teneriffe, black ..	1	11	.. 2	10	3	0	.. 3
KOWRIE, rough ..	20	0	.. 43	0	20	0	.. 45	0	" silver ..	1	11	.. 2	1	2	10	.. 3



asks "if a baking powder containing alum as well as tartaric acid to be brought under the penalty of the Sale of Food and Drugs Act?" and say certainly not. There is no recognised formula for baking and anyone is at liberty to prepare it as he may think fit. (2). The oxide of sulphur used in pharmacy is not a definite chemical compound. It consists of flowers of sulphur impregnated with more or less of sulphur chloride. By *Ung. Sulph. Hypochloritis Co.* we should understand the second formula given by Beasley under the title of *Ung. Sulph. oridi.*

icus says:—"I had the following prescription given in to dispense as ago:—

v. strychnine Gr. $\frac{1}{4}$
Mitte xxiv. pulv., each containing the above.

Sig. One to be taken three times a day, after meals."

respondent told the party it would take some time to prepare, and he sent a polite note to the prescriber, who lived within a few miles, to get that the dose ordered was considerably above the maximum.

He received the following reply:—

Sir,—You made up the same powders in the same dose about a month ago for the same patient. However, make up the powders to a bulk with pulv. liquorice, and direct half a one to be taken three times a day after meals. I will watch the effects and increase as I see fit, am," &c.

icus says:—"I had not dispensed them previously, but I had reason to think that a brother chemist had, although there was no stamp or any mark in the prescription. I wonder if he dispensed them in the manner? I wrote the doctor afterwards and told him so, but he gave no reply. Do you think I acted rightly? Kindly let me hear your opinion in column to correspondents and oblige."

there cannot be a doubt as to the correctness of the course pursued by the correspondent. Strychnine has been given in doses up to $\frac{1}{4}$ grain, and even less, will sometimes produce unpleasant effects. The alarming part of the story is that we have doctors around to judge from the tone of this one's letter, order such an agent as strychnine with only a vague notion of the dose they wish to administer. The prescriber seems to have been indifferent as to whether $\frac{1}{4}$ or $\frac{1}{2}$ grain was the dose. The use of such remedies as strychnine will have to be left to a special class of medical practitioners. The lack of courteous judgment of the dispenser's carefulness in the doctor's reply is a small importance. Chemists must do what they can to protect the public regardless of the prescriber's prejudices.

By registration of a label at Stationers' Hall you are supposed to take advantage of the Copyright Act. You have to obtain and fill up a form, which a charge of 1d. is made, and for the registration a fee of 1s. is made. This is done at Stationers' Hall, Stationers' Hall Court, but we are not able to define exactly the value you would get for the label. We do not remember any legal action in reference to a label registered of copyright formed any part of the evidence. All actions are trials in equity, and are decided according to proof of adoption of the label. The Merchandise Marks Act rather than the Copyright Act is applicable to labels. Of course, if a trade mark is on the label, that can be specially protected at the Trade Marks Office, Quality Court, Chancery Lane, E.C.

entry Chemist.—The Pharmacy Act does not require a chemist to register of the sale of poisons before any particular person nor at specified times. But as that book is kept for public purposes an extension of it could, no doubt, be demanded and enforced by any duly-qualified officer of police.

The dispensing in the regular army is generally performed, we understand, by an intelligent sergeant. Candidates for assistant dispenserships at military hospitals at home and abroad must apply to the Secretary of the War for form of application and must await vacancies. The Minor qualification of the Pharmaceutical Society is essential, and they cannot be of stores without possessing the Major qualification. They must be of 20 and 25 years of age. The pay commences at 5s. per day, and increases to about 20 years to 10s. per day; quarters found.

There is at present no legal restriction on the use of the title "veterinary surgeon," though, as you may notice from this and our last issues, an attempt has been made by a section of the dentists are trying to obtain an Act of Parliament which will confer an exclusive property in that title. The titles of "veterinary surgeon" and "farrier" are equally open.

The medicine you describe would require the addition of the word "poison" to conform to the Pharmacy Act. As far as we understand the sale of a medicine containing prussic acid should be conducted in accordance with the regulations applicable to part I. of the Poison Schedule.

He wants a receipt for egg substitute or egg powder. A usual formula is:—1 lb. bicarbonate of soda and potato flour, or British white, of each $\frac{1}{2}$ lb.; turmeric, 1 drachm. Dry separately and mix.

Juvenile.—French liquid dentrifices when red are usually coloured with cochineal in various proportions. Acid tooth washes (which, by the bye, are not very good for the teeth) may probably be coloured red by the same means, if the acid be not too strong.

Paracelsus would be obliged if some of our readers would give him the formula of Unguentum Paracelsus.

Mr. Halse.—Blue-black Ink.—A good formula, said to produce a permanent ink which copies well, is as follows:—

Aleppo galls (good)	10 ounces
Sulphate of iron	3 "
Gum senegal	2 "
Cloves, bruised	$\frac{1}{2}$ "
Sulphate of indigo	1 drachm
Sugar	1 ounce
Water	1 gallon

Put the bruised galls and cloves in the water and stir frequently for two days, strain and press out all the liquid, next put in the sulphate of iron, gum, and sugar, stir frequently until all is dissolved, strain again, and add sulphate of indigo. (Cristiani, "Perfumery and Kindred Arts.")

Cement requires a formula for "the best cement to fasten transparent glass tablets to outside windows, one that, although they shall be fast, they could be easily removed at any time if required; also of a thoroughly good cement to fasten glass labels to the fronts of drawers?" A mixture of 3 parts of resin and 1 part of wax is recommended by Parrish for fixing glass labels on drawers, and would answer probably in this case. The articles cemented with it could be separated by the application of heat. Myrrh and Eau de Cologne for the teeth can be made by mixing 2 parts tinct. myrrh simp. with 1 part Eau de Cologne.

Eblana.—Formulae for the manufacture of artificial fruit essences will be found at page 150 of our Diary for this year. Cristiani devotes Chapter XVII. of his work on "Perfumery and the Kindred Arts" to this subject. If you wish to manufacture the ethers employed on a commercial scale you will hardly get the necessary directions outside Watts's "Dictionary of Chemistry," or Muspratt's "Applied Chemistry."

A. F. N.—There are two distinct editions of Bentham's "Flora," of each of which there has probably been more than one issue. The larger, in two volumes, has a small woodcut of every plant described. The illustrations are very accurate, and if used as illustrations only to confirm the results arrived at from the printed matter they are very useful. For identifying plants without reference to the descriptions they are almost useless.

Mr. P. A. Stevens (Hoxton).—Gelatin may be made damp-proof by mixing it with a small proportion of bichromate of potash solution, and exposing it to the sun and air. The mixture must be made immediately before using, or the gelatin will become insoluble too soon. You may treat the gelatin either by sponging the bichromate solution over its surface, or by dissolving it in a little hot water, mixing in the required quantity of bichromate solution, and using at once. Gelatin so treated has a more or less deep yellow tint, but is quite transparent. "In placing gelatin on show-cards that have gold printing, the gelatin, as a rule, turns the gold to a blackish colour, entirely destroying its brilliancy. Can you tell me of anything that I can use to prevent this discoloration?" Perhaps some of our correspondents will give us their experience on the matter. We should imagine that the remedy would be to get a genuine gold and pure gelatin, and should ascribe the discoloration to the action of the sulphur of the gelatin on the inferior metals of the gold ink.

Hirudo.—According to the Pharmacy Act, the widow may, as executrix, carry on the business provided she employs as manager someone who is on the register. You will do perfectly when you have passed the Minor; the apothecary might do meanwhile, provided he became for the time the actual proprietor of the business. He would not do as the manager, but the Pharmacy Act expressly exempts from its operation the business of a legally-qualified apothecary.

Canine Toxicology.—Mr. John Throssell, of Cambridge, points out that in printing his letter last month we made him say:—"An ordinary one, or Scheele's acid stoppered bottle," &c.; it should have read, "an ordinary 1-oz. Scheele's acid stoppered bottle, half filled with acid."

F. S.—We have not stated that the Dental Practitioners Bill has passed, and that duty is hardly likely to devolve upon us this session. You will remark from our report this month that the Chemists and Druggists' Trade Association is looking after the interests of chemists practising dentistry.

Z. Y.—For a simple hair wash, without glycerine or oil, we should recommend the subjoined:—

Spts. of rosemary	1 pint.
Rose water	1 "
Carbonate of potash	2 drachms.

If you want any different kind please give some indication of the sort of thing you require.

L'Extincteur, J. T. C.—Can any of our readers tell this gentleman what is used in L'Extincteur, or the household fire-engine, and what quantities are required for a No. 5?

Fidelis.—"Farmers' Friend," for preventing smut in wheat, is made in many different ways. Ground blue vitriol, in 1-lb. packets, is much used by farmers who like to know what they are buying, and do not trust to secret

preparations, and this salt is the basis of all the most popular dressings. A certain proportion of arsenic is sometimes added. One pound of sulphate of copper is sufficient to dress six bushels of wheat.

Plato.—A registered chemist may leave his shop in charge of whomsoever he please. The law recognises his responsibility, however, for all that occurs during his absence.

W. C. D. writes as follows:—"The other evening I mixed in a tumbler a small quantity of sulphur, bicarbonate of soda, and sugar, with some water; about half an hour after the mixture had been used the tumbler cracked right up the side, with a pretty loud report. The tumbler was a strong one and of good quality, and from its position it could not possibly have been touched by anything. I am at a loss to understand the cause. Can you offer any explanation?" The history of this case is not very complete. What occurred in the half-hour between the using of the glass and its fracture we are not told. Many things may have happened to it during that time, and we do not think there is any connection of cause and effect between the two things mentioned. We shall be glad to hear what our readers have to say on the subject.

Vandyke.—The following is used as a lemon-flavouring in the manufacture of lemonade:—Peel of fresh lemons, $\frac{1}{2}$ lb.; spirit of wine, 1 pint; digest for a week, press and filter. Or you can infuse 1 lb. of peel in $\frac{1}{2}$ gallon of boiling water for an hour; press, and boil to $\frac{1}{2}$ pint. Then add S.V.R. (in which oil of lemon, $\frac{1}{2}$ oz., has been dissolved) $\frac{1}{2}$ pint.

B. W.—Last October, in our report of the American Pharmaceutical Association meeting, we published a formula for Ean de Cologne, given by Mr. William Saunders, and said to closely resemble the original Farina's. Our correspondent says he has tried it, and finds he is as far off the mark as ever. Cristiani, of Philadelphia, in his recent work on "Perfumery and Kindred Arts," gives the following as a formula for Farina's Eau de Cologne:—

Oil of Bergamot	4 ounces
" Lemon	1 $\frac{1}{2}$ "
" Neroli	3 "
" Rosemary	3 "
" Cloves	$\frac{1}{2}$ "
" Lavand. (Ang.)	$\frac{1}{2}$ "
S.V.R. 60 o.p., and very pure	4 gallons

It should be noted that Ean de Cologne always improves by being kept in large bulk. In Mr. Farina's cellars, which we have explored, the prepared perfume is always kept over a year before it is drawn off. We have ourselves found (or fancied), when experimenting on this product some years ago, that a minute trace of oil of amber improved the result, but we should advise you not to risk a large quantity of your scent in this enterprise.

D. I.—Laudanum being included in Part II. of the schedule, it is not necessary to enter the sales thereof in the Poison Book.

Hot Water.—You had better get particulars of gas-heating apparatus for baths from your neighbouring ironmonger; Stodge & Co., 67 St. Paul's Churchyard; Bishop, of Clerkenwell Green; Scott, Brown & Co., of West Bromwich, and many other firms are makers of such. A better plan, if you can manage it, is to have a pipe brought from your kitchen boiler to the bath. Of course this supposes the cistern to be high enough.—With regard to the pronunciation of such words as quinine, strychnine, &c., the termination is now almost always pronounced *een*. We think popular fashion is wrong, however, in accentuating the final syllable in quinine rather than the first.

R. H. B.—Liquid Dentifrice.—We believe the preparation your name is made from soapwort and perfumed. This formula may help you:—

Fine potash soap	3 ounces
Cream of tartar	1 drachm
Alcohol, sp. gr. .910	18 ounces
Perfumed water	6 "

Digest and filter.

W. F.—The only American dental journals known to us are the *American Journal of Dental Science*, of Baltimore—London, Tröhner, Ludgate Hill; and the *Dental Cosmos*, of Philadelphia—London, Rutterford, 11 Poland Street, W.

Black Hair Dye without Silver.—The *American Druggists' Circular* gives the following:—The following is said to give a good and natural-looking dye, free from the caustic action of silver salts and the poisonous effects of lead compounds. Two preparations are needed.

No. 1.	
Citrate of bismuth	1 ounce
Rose water	2 ounces
Distilled water	2 "
Alcohol	5 drachms
Ammonia	Sufficient.

No. 2.	
Hydrosulphate of soda	12 drachms
Distilled water	4 ounces.

Each solution is to be applied separately.

D. H. G.—Hyocholic acid is obtained from pig's bile. You will find the process in recent editions of Fowne's "Chemistry."

Tannin.—The explanations you require could only be given in a long chapter on analysis. You can only become an analyst by patient, persevering study, and the path lies through numberless failures and difficulties. The method of proceeding, in any new difficulty, is not like a patent medicine which you can send to London for and get back by next post. There are three courses open to you, as statesmen say. You can abandon the study altogether, you can take a course in a regular school, or you can make up your mind to hard, steady work at home. Perhaps the deficiency lies rather in your power of application than in "Attfield."

A. B. C.—We are sorry to say we cannot find the formula on the page mentioned (of which, by the by, you do not give the number). Have you not made a mistake in the year?

R. T.—You cannot do better than use Judson's Bronzonette, which, by the way, should be brought forward about this time as a temptation to housekeepers preparing for the "spring cleaning."

THE CHEMICAL SOCIETY.

Thursday, February 21, 1878.

DR. GLADSTONE, President, in the chair.

A lecture entitled "Laboratory Experiences on Board the *Challenger*" was delivered by Mr. J. Y. Buchanan. After describing his laboratory—which measured 10 feet by 5 feet 8 inches and 6 feet high—and its fittings, the lecturer gave a detailed account of the means by which, after estimating the compressibilities of water and mercury, he was enabled to determine the depths and temperatures attained by the sounding-line. The compressibility of distilled water was found to be 0.000049 per atmosphere, or 0.0009 per 100 fathoms; sea-water 0.00077 per 100 fathoms; and of mercury 0.000027 per 100 fathoms, or 0.0000015 per atmosphere. He then described the apparatus and methods by means of which the amounts of oxygen, nitrogen, and carbonic acid were determined. The most interesting results obtained were the following:—From the surface down to 300 fathoms the amount of oxygen continuously decreases; from 300 fathoms downward whatever be the depth, the amount increases. This anomalous result the lecturer stated to be due to the great abundance of animal life at the depth of 300 fathoms, the increase in the quantity of oxygen for greater depths being caused by its non-consumption owing to the absence of life. The next part of the lecture dealt with the distribution of the sea-water as regards density, in depth and superficially. Two regions of maximum density exist north and south of the equator, corresponding to the tracts frequented by the trade-winds. At 300 fathoms deep a great zone of water of low density is found. The densest water is found in the Atlantic. Light water is found in the neighbourhood of ice and in certain regions immediately after the cessation of the monsoons. The maxima density lie in the north hemisphere to the S.W., in the south to the N.W., of the maxima of barometric pressure.

A hearty and unanimous vote of thanks was given to Mr. Buchanan for his interesting lecture, which was illustrated by many tables and diagrams.

Thursday, March 7, 1878.

DR. GILBERT, Vice-president, in the chair.

The following papers were read:—

"On some New Derivatives of Anisoil," by W. H. Perkin. The author has obtained orthovinylanisoil, boiling 195–200° sp. gr. at 15°C 1.0095; orthoallylanisoil, boiling 222–223°C, sp. gr. at 15°C 0.9972; and orthobulenylanisoil, boiling 232–234° sp. gr. at 15°C 0.9817. The author compares the physical properties of the ortho- and para-compounds; the former boil at 10° lower, have a slightly higher specific gravity, and crystallise with much greater difficulty.

"Note on the Action of Ammonia on Anthrapurpurin," by W. H. Perkin. The author has investigated the colouring matters produced by the action of heat on an ammoniacal solution of anthrapurpurin in sealed tubes, at 100° and 180°C. At the former temperature an unstable substance was obtained, dyed alumina mordants purple, and weak iron mordants indigo blue. At 180° a new substance, anthrapurpuramide, was formed which does not dye mordants.

"On certain Polyiodides," by G. S. Johnson. The author attempted, without success, to prepare a compound having the composition AgI₃, or a similar substance having thallium in place of silver. Various compounds of silver and potassium thallium and potassium, and especially a very complicated substance, containing lead, acetic acid, potassium, and iodine, were formed and analysed. The latter substance crystallises in square prisms: of the six faces two have a dark purple, a four a greenish golden reflection.

"On an Improved Form of Wash-bottle," by T. Bayley. The object of this contrivance is to prevent the reflux of steam or other gases, such as ammonia, into the mouth of the operator without losing the advantages of the ordinary wash-bottle.

"On the Preparation of Glycollic Acid," by R. T. Plimpton. The author endeavoured to prepare this substance by the method recommended by Professor Church, but only obtained quantities too small for analysis, using two ounces of oxalic acid.

The Society adjourned to March 21, when a paper, by J. Witt, "On Nitrosamines," will be read.

